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NOTES  
FROM THE  
LEYDEN MUSEUM.



NOTES

FROM THE

LEYDEN MUSEUM

FOUNDED BY THE LATE

**Prof. H. SCHLEGEL,**

CONTINUED BY

**Dr. F. A. JENTINK,**

Director of the Museum.

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**Vol. XVII.**

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LEYDEN

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## NOTE I.

GORDIENS NOUVEAUX OU PEU CONNUS  
DU MUSÉE D'HISTOIRE NATURELLE DE LEYDE

PAR

**LORENZO CAMERANO,**

Professeur à l'Université de Turin.

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*Gordius subspiralis* Diesing.

Un exemplaire ♀. — Texas (Friedrich).

Longueur m. 0,25. — Largeur m. 0,001.

Le corps est légèrement aminci dans la partie antérieure. L'extrémité antérieure se termine assez brusquement en pointe: l'extrémité postérieure est plus large que le corps; vers l'extrémité elle s'amincit en pointe.

L'orifice cloacal est terminal et se trouve au milieu de l'extrémité postérieure.

L'animal est brun-clair, légèrement iridescent; le collier noir est peu visible; sa largeur ne dépasse pas un demi millimètre.

La cuticule n'a pas d'aréoles: elle présente les lignes caractéristiques, qui, en se croisant, délimitent des espaces en losanges.

On observe par-ci par-là, surtout vers l'extrémité antérieure, des prolongements en forme de poils; il n'y a pas de vraies formations à croix, ni de cônes épidermiques.

Je rapporte cet exemplaire au *Gordius subspiralis* Diesing, très-commun dans le territoire du Kansas.

Notes from the Leyden Museum, Vol. XVII.

*Gordius chinensis* Villot.

Un exemplaire ♀. — Goenong Kenepai: Bornéo, 15 Décembre 1893 (Büttikofer, Expédition à Bornéo).

Longueur m. 0,243. — Largeur m. 0,0015.

Le corps s'amincit graduellement vers l'extrémité antérieure qui devient brusquement effilée. L'orifice cloacal est presque ventral et se trouve dans un sillon. Toute l'extrémité postérieure rappelle dans sa forme celle de la femelle du *Gordius pustulosus* Baird.

L'animal est jaune-brun; il n'y a pas de collier noir. Les aréoles de la cuticule extérieure sont irrégulières et de dimensions très-variées. Elles sont très-rapprochées de manière que le sillon qui les sépare est très-petit. Dans celui-ci on observe des granulations réfringentes, très-petites. Ça et là on voit aussi des prolongements plus longs, réfringents. Les aréoles les plus grandes ont la largeur de 20 micromillimètres, mais il y en a d'autres qui mesurent à peine 12 micromillimètres de largeur.

A cause des caractères de la cuticule et de la coloration, je rapporte cet exemplaire au *G. chinensis* de Villot qui a décrit seulement le mâle.

*Gordius corrugatus*, nov. spec.

Un exemplaire ♀. — Tandjong-Morawa: Sumatra orient. (Doct. B. Hagen).

Longueur m. 0,23. — Largeur m. 0,001.

Le corps est légèrement aminci et aplati vers l'extrémité antérieure qui est assez effilée. Vers l'extrémité postérieure le corps est aussi aminci. L'orifice cloacal est terminal et médian. L'animal est brun-rouge foncé; le collier noir occupe à peine un demi-millimètre.

La cuticule n'a pas d'aréoles et les lignes qui s'entrecroisent pour former des espaces en losanges sont très-marquées. Ça et là on observe des poils très-fins, à peine visibles avec des grossissements très-forts (Zeiss, obj. F, ocul. 3). Il n'y a pas de formations en croix, ni de cônes épidermiques. La cuticule présente encore des rides très-

finés, longitudinales, entrecroisées (visibles avec une loupe simple), qui peuvent être considérées comme un caractère constant, vu que l'animal est plein d'oeufs.

Cette espèce est la première forme de *Gordius* avec cuticule lisse qu'on a trouvée dans l'île de Sumatra.

*Gordius Salvadorii*, nov. spec.

Deux exemplaires ♂. — Grandes îles de la Sonde (Neeb).  
Longueur m. 0,235 et 0,249. — Largeur m. 0,001.

L'extrémité antérieure est un peu amincie et arrondie vers la pointe, avec un collier noirâtre, court et à peine visible.

L'extrémité postérieure est bilobée: les lobes sont divergents et pointus. Le repli postcloacal est bien développé et noir. Il n'y a pas de repli cutané précloacal.

L'animal a une couleur jaune-brune uniforme: les lobes sont légèrement noirâtres.

La cuticule n'a pas d'aréoles et présente des lignes très-marquées qui délimitent des espaces en losange: ça et là on observe des poils très-fins qui sont en rapport avec les formations en croix des couches cuticulaires.

Cette espèce diffère du *G. Horsti* par la forme des lobes postérieurs, par l'absence du repli précloacal et par la présence d'une quantité de prolongements piliformes très-petits de la cuticule. La forme aigue des lobes postérieurs la distingue aussi facilement du *G. Villoti* Rosa. Elle me semble aussi bien distincte du *G. fulgur* Baird, à en juger d'après le dessin de la cuticule, à vrai dire assez grossier, donné par M. Orley<sup>1)</sup>.

*Gordius Horsti*, nov. spec.

Un exemplaire ♂. — Bornéo.

Longueur m. 0,52. — Largeur m. 0,008.

Un exemplaire ♀. — Bornéo.

Longueur m. 1,19. — Largeur m. 0,0013.

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1) On hair-worms in the Collection of the British Museum. Ann. & Mag. Nat. Hist. ser. 5, vol. VIII, 1881.

L'extrémité antérieure a la même forme chez les deux sexes: elle est effilée et présente un collier noir peu visible qui occupe à peine l'espace d'un demi-millimètre.

Chez la femelle l'extrémité postérieure est élargie (m. 0,0017 de diamètre transversal), l'orifice cloacal est terminal et médian.

Chez le mâle l'extrémité postérieure est bilobée. Les deux lobes sont courts (à peine un demi-millimètre), aigus et recourbés très-sensiblement vers le côté ventral. Il y a un repli postcloacal bien développé et on observe aussi au dessus de l'orifice cloacal un repli cutané très-marqué, disposé concentriquement avec le repli postcloacal. L'extrémité postérieure, considérée dans son ensemble, a la forme d'une cuillère dont la concavité est inférieure, dans laquelle s'ouvre l'orifice cloacal.

La cuticule n'a pas d'aréoles et ne présente aucun prolongement piliforme, ni aucun cône épidermique.

Le mâle est brun-clair, presque jaunâtre, la femelle est brune, légèrement rougeâtre.

Cette espèce se distingue facilement parmi celles dont la cuticule n'a pas d'aréoles, par la forme particulière de l'extrémité postérieure du mâle. Elle a quelque affinité avec le *Gordius paranensis* Camer. par la présence d'une sorte de repli précloacal, mais elle s'en distingue par l'absence des nombreux prolongements piliformes de la cuticule qui caractérise cette dernière espèce.

*Gordius obesus*, nov. spec.

Un exemplaire ♂. — Hollande.

Longueur m. 0,38. — Largeur m. 0,02.

Cette forme a un corps très-large qui s'amincit considérablement vers l'extrémité antérieure où il mesure encore m. 0,0013 de diamètre transversal, un peu avant la calotte blanche. L'extrémité antérieure est à peine effilée et se termine par une calotte blanche très-marquée. L'extrémité postérieure s'amincit brusquement au niveau de la bifur-

cation où elle mesure à peine un millimètre de diamètre transversal.

Les deux lobes de l'extrémité postérieure sont amincis et courts: ils mesurent à peine un demi-millimètre de longueur. Il y a un pli postcloacal marqué qui touche supérieurement l'orifice cloacal. Devant et sur les côtés de l'orifice cloacal on observe deux plis cutanés qui se courbent supérieurement vers la ligne médiane inférieure de l'animal et qui se prolongent postérieurement sur la surface inférieure du lobe. L'espace délimité par ces deux plis est blanchâtre.

L'animal est brun-gris clair. Il n'y a pas de trace de collier noir: le pli postcloacal et les deux plis cutanés susdits sont brun foncé.

La couche cuticulaire extérieure n'a pas de vraies aréoles, mais elle présente plusieurs formations qui ont l'aspect de plaques réfringentes, réunies deux par deux, qui donnent à la cuticule un aspect tout-à-fait caractéristique. (Leur longueur est de 9 micromillimètres à peu près et leur largeur de 5 micromillimètres). Examinées avec des grossissements très-forts (Zeiss, obj. apochr. immers. homog. 1,5 m.m., apert. 1,30; ocul. 2), on voit qu'elles se trouvent entre les couches fibrillaires de la cuticule. Il s'agit probablement de cônes épidermiques <sup>1)</sup>.

Cette espèce est très-bien caractérisée parmi celles dont la cuticule n'a pas de vraies aréoles, par la forme de l'extrémité antérieure et postérieure, par l'absence du collier noir, par la cuticule, et aussi par le diamètre transversal relativement très-considérable.

*Gordius varius* Leidy.

Un exemplaire ♀. — Bogotà.

Longueur m. 0,273. — Largeur m. 0,0006.

Les trois lobes de l'extrémité postérieure, comparés avec

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<sup>1)</sup> Camerano, Ricerche intorno alla Anatomia ed Istologia dei Gordii. Torino. E. Loescher, 1888.

ceux du *G. tricuspidatus* L. Dufour, sont profondément divisés et le lobe médian est mince, elliptique et un peu plus long que les lobes latéraux. Ils n'ont pas de poils. Les aréoles de la cuticule ont une largeur moyenne de 8 micromillimètres.

*Gordius Emeryi*, nov. spec.

Un exemplaire ♀. — Grandes îles de la Sonde (Neeb). Longueur m. 0,13. — Largeur m. 0,0005.

L'extrémité antérieure est notablement effilée et se termine par une petite calotte transparente.

L'extrémité postérieure est divisée en trois lobes, dont le postérieur est un peu plus court et étroit. Ces lobes se terminent en pointe arrondie. Le bord latéral de chaque lobe est un peu sinueux près de l'extrémité.

La coloration générale est brun-clair. L'extrémité antérieure est terminée par une petite calotte blanchâtre. Il existe un collier noir qui mesure environ un demi-millimètre de longueur. Il n'y a pas de lignes longitudinales d'un brun plus ou moins foncé.

La cuticule ressemble assez à celle du *Gordius tricuspidatus* L. Dufour <sup>1)</sup>.

Cependant les aréoles sont plus petites, puisqu'elles ne mesurent que 5 micromillimètres environ de longueur. Les bords des aréoles, examinés avec un grossissement très-fort (Zeiss, obj.  $\frac{1}{2}$  immers. homog.; ocul. 2), présentent de légers festons. Plusieurs aréoles sont ombiliquées. Ça et là on observe des prolongements piliformes très-petits, qui paraissent plus réfringents.

Sur les lobes de l'extrémité postérieure, on observe intérieurement et extérieurement plusieurs poils ondulés, relativement très-longs, puisqu'ils mesurent jusqu'à 25 micromillimètres de longueur.

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1) Voir: L. Camerano, Nota intorno alla struttura della cuticola del *Gordius tricuspidatus* L. Duf. Boll. Mus. Zool. ed Anat. Comp. di Torino, vol II, n. 25, 1887.

Cette espèce a quelque affinité avec le *Gordius tricuspidatus* L. Dufour, mais elle s'en distingue par la forme de l'extrémité antérieure, par les aréoles qui sont généralement plus petites et par la forme des lobes de l'extrémité postérieure.

*Chordodes Silvestri*, nov. spec.

Deux exemplaires ♂. — Japon (Dr. Burger).

Longueur m. 0,172 et 0,19. — Largeur m. 0,0012.

Un exemplaire ♀. — Goenong Kenepai: Bornéo, 15 Décembre 1893 (Büttikofer, Expédition à Bornéo).

Longueur m. 0,21. — Largeur m. 0,0015.

Le corps est aminci antérieurement et postérieurement dans les deux sexes, un peu moins chez la femelle que chez le mâle. Chez la femelle l'extrémité est arrondie, séparée du corps par une sorte de rétrécissement. L'orifice cloacal est terminal. Chez le mâle l'orifice cloacal est ventral et se trouve à la distance d'un demi-millimètre de l'extrémité. Il est situé dans le sillon ventral caractéristique des mâles du genre *Chordodes*.

Les deux mâles susindiqués sont de couleur noirâtre: la femelle est jaunâtre et n'a pas de collier noir.

La couche extérieure de la cuticule présente:

1°. Des aréoles papillaires à contour festonné qui présentent généralement un petit canal médian rempli d'une substance réfringente. (Largeur variable de 8 à 12 micromillimètres).

2°. Aréoles papillaires semblables aux précédentes, mais munies d'un prolongement en forme de crochet dont la largeur mesure à la base 3 micromillimètres et la hauteur 9 micromillimètres. Ces aréoles sont distribuées çà et là parmi celles du premier groupe et sont plus nombreuses chez les mâles que chez la femelle.

3°. Aréoles papillaires relevées d'un diamètre variable de 10 à 15 micromillimètres, à contour rond, couvertes dans leur partie supérieure de prolongements réfringents, relativement longs et gros. Ces aréoles, groupées deux par

deux, sont entourées par une série d'aréoles papillaires du premier groupe qui deviennent un peu plus hautes et un peu plus foncées.

Ces groupes d'aréoles papillaires sont relativement éloignés les uns des autres; l'espace compris entre eux est occupé par les aréoles du premier groupe avec quelques aréoles du deuxième groupe.

Cette espèce se distingue du *Chordodes Bouvieri* Villot par la forme des aréoles papillaires munies de prolongements, parce que ces aréoles sont entourées d'autres aréoles à contour festonné, relevées et plus foncées, et par la coloration générale. Elle se distingue aussi du *Ch. Aelianus* Camer. par la coloration et par la forme des aréoles papillaires munies de prolongements. On peut aussi la distinguer facilement du *Ch. sumatrensis* Villot, du *Ch. ornatus* Grenacher et du *Ch. Modiglianii* Camer. par les caractères de la cuticule. Elle se distingue du *Ch. timorensis* Camer. par l'absence de grosses aréoles papillaires distribuées ça et là. On peut dire le même pour le *Ch. puncticulatus* Camer.

*Chordodes Jandae*, nov. spec.

Deux exemplaires ♂. — Ruisseau près de Dillu: Timor (Dr. H. ten Kate).

a. Longueur m. 0,18. — Largeur m. 0,0013.

b. Longueur m. 0,105. — Largeur m. 0,0005.

Le corps s'amincit graduellement vers l'extrémité antérieure qui se termine en une pointe blanchâtre, et il s'amincit brusquement vers l'extrémité postérieure qui présente un sillon longitudinal, médian, ventral, long à peine un demi-millimètre. Dans la partie dorsale correspondante on observe aussi un sillon longitudinal. L'orifice cloacal se trouve dans le sillon ventral à la distance d'un demi-millimètre à peu près de l'extrémité de l'animal. Dans l'exemplaire le plus petit susindiqué les sillons dont nous avons parlé sont à peine visibles.

L'exemplaire le plus grand est brun-clair; l'exemplaire le



plus petit est jannâtre. Il n'y a pas de collier noir, et l'extrémité antérieure est blanchâtre.

La cuticule extérieure présente plusieurs sortes d'aréoles :

1°. Aréoles petites et nombreuses (larges 2—4 micromillimètres), irrégulières, rondes ou à contour irrégulier qui couvrent toute la cuticule et qui, examinées à un faible grossissement, ressemblent à une granulation grossière.

2°. Aréoles papillaires brun-foncées, relevées, à contour presque rond ou oval (15—26 micromillimètres). Leur surface est tuberculeuse de manière qu'elle rappelle la forme de framboises. Ces aréoles se trouvent isolées ou bien réunies en groupes dans lesquels leur nombre est variable. Dans ces groupes il y a souvent deux ou trois aréoles centrales plus grandes et sept ou huit aréoles plus petites qui les environnent. Ces aréoles papillaires ne présentent jamais un prolongement réfringent.

3°. Ça et là d'autres aréoles papillaires, tuberculeuses, pourvues d'un prolongement transparent, recourbé, presque cylindrique, long 1—12 micromillimètres et large 4 micromillimètres à peu près.

Cette espèce est proche du *C. Modiglianii* Camer. d'Engano, mais elle s'en distingue par la présence des aréoles du premier groupe et par l'absence des prolongements filiformes sur les aréoles papillaires.

*Chordodes timorensis*, nov. spec.

Un exemplaire ♂. — Ruisseau près de Dillu : Timor (Dr. H. ten Kate).

Longueur m. 0,21. — Largeur m. 0,0015.

Cette espèce est proche du *Chordodes Jandae* quant à la forme du corps : la partie postérieure qui présente le sillon médian longitudinal, dans lequel se trouve l'orifice cloacal, est relativement plus courte. L'animal est noir.

La couche cuticulaire extérieure présente :

1°. Aréoles papillaires à contour non festonné, à dimensions variables entre 5, 8, 10 micromillimètres de largeur. Ces aréoles sont presque rondes supérieurement, plus ou moins coniques et amincies.

2°. Aréoles plus grandes (diamètre maximum 22 micromillimètres), hautes, coniques, avec la partie supérieure finement tuberculeuse (Zeiss, obj. F, ocul. 4).

3°. Aréoles relevées avec un prolongement médian, transparent et recourbé.

4°. Aréoles grandes (17 micromillimètres de diamètre transversal et hauteur variable entre 25—30 micromillimètres), coniques et couvertes supérieurement de prolongements réfringents, longs. Ces aréoles sont réunies par groupes de deux ou trois et sont entourées par un nombre variable d'aréoles du 3e groupe. Ces dernières se trouvent aussi isolées çà et là. Les aréoles pourvues d'un prolongement médian (groupe n. 2) sont aussi disposées çà et là.

Cette espèce a quelque affinité avec le *Gordius ornatus* Grenacher par sa cuticule. Celui-ci, pour ce qu'on peut voir dans les dessins 2, 3, 4 (pl. XXIII) de l'ouvrage de Grenacher <sup>1)</sup> et dans la description de l'animal, n'a pas d'aréoles isolées avec prolongement allongé et recourbé. La forme des aréoles papillaires du premier groupe susdit est différente.

*Chordodes penicillatus*, nov. spec.

Un exemplaire ♀. — Italie ? (Cantraine).

Longueur m. 0,145. — Largeur m. 0,001.

L'extrémité antérieure est amincie : l'extrémité postérieure est un peu arrondie, mais plus étroite que le corps dont elle est séparée par un petit rétrécissement. L'orifice cloacal est terminal.

La coloration générale est noire.

La cuticule extérieure est couverte d'aréoles papillaires relevées, qui ont une forme légèrement ovale, dont le contour est festonné et qui sont pourvues d'un canal intérieur plein d'une matière réfringente. Quelques-unes, qui présentent au milieu un prolongement peu élevé, sont disposées par-ci par-là. La largeur des aréoles peut varier

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<sup>1)</sup> Zeitschr. f. wiss. Zool. Vol. 18 (1868).

entre 12—15 micromillimètres; elles sont séparées entre elles par un intervalle de 4 micromillimètres qui contient un bon nombre de petits tubercules. On observe par-ci-par-là des aréoles papillaires groupées par paires, relativement très-élevées, ayant la forme de colonnettes qui portent à leur sommet un pinceau de prolongements très-longs. Le diamètre de ces aréoles papillaires est de 17 micromillimètres. Ces aréoles papillaires ne sont pas entourées, comme on voit très-souvent chez d'autres espèces de *Chordodes*, par une série d'autres aréoles papillaires plus élevées qui forment à peu près une sorte de palissade, mais on remarque immédiatement les aréoles qui appartiennent à la susdite première catégorie.

Cette espèce ressemble assez au *Chordodes Bouvieri* Villot par sa cuticule; mais son mode de coloration est différent et différente est aussi la forme des aréoles papillaires qui portent les prolongements.

L'exemplaire que je viens de décrire porte l'indication: »Cantraine: Italie". Je suppose qu'il y ait eu quelque erreur dans l'indication de la localité, parce que jusqu'à présent le genre *Chordodes* n'a pas été trouvé en Europe et d'ailleurs l'espèce en question a une grande analogie avec celles de la région orientale de l'Asie et de l'Archipel Malais.

*Chordodes puncticulatus*, nov. spec.

Un exemplaire ♀. — Deli: Sumatra orient. (Dr. H. J. Veth).  
Longueur m. 0,18. — Largeur m. 0,0015.

Le corps s'amincit antérieurement et il mesure à peine un demi-millimètre de diamètre transversal au dessous de la calotte transparente. Le corps s'amincit de même vers l'extrémité postérieure où son diamètre transversal a la largeur d'un millimètre.

L'orifice cloacal est terminal.

La couleur de l'animal est un brun-clair; il n'y a pas de collier noir; en l'examinant avec une loupe simple il paraît finement maculé de brun-foncé, ce qui dépend des

groupes des aréoles plus hautes de la cuticule extérieure qui ont une couleur plus foncée.

La couche cuticulaire extérieure présente les formations suivantes :

1°. Aréoles presque rondes où ovales, peu élevées, à contour non festonné, longues de 12—14 micromillimètres et larges de 7—9 micromillimètres.

2°. Prolongements coniques et recourbés à l'extrémité comme des crochets et disposés par-ci par-là. Leur largeur à la base est de 5 micromillimètres, leur hauteur est de 15 micromillimètres.

3°. Aréoles relevées, en forme de cône tronqué, à contour oval ou presque rond, longues 11 et larges 9 micromillimètres à peu près. Ces aréoles ont une couleur brune foncée, et tranchent fortement parmi celles du premier groupe qui sont beaucoup plus claires. Elles sont isolées ou bien réunies en groupes de dix, douze ou plus. Dans leur partie supérieure elles présentent des prolongements courts et fins, réfringents.

Cette espèce se distingue facilement par les caractères de la cuticule des *Ch. sumatrensis* Villot, *Ch. Modiglianii* Camer., *Ch. Aelianus* Camer., espèces de Sumatra et d'Engano. Elle se distingue aussi du *Ch. caledoniensis* Villot. Elle présente quelque affinité avec le *Ch. ornatus* Grenacher des îles Philippines, mais elle s'en distingue par l'absence des longs prolongements filiformes dans les groupes des aréoles plus grosses, au moins pour ce qu'on peut juger par la description et par le dessin de la cuticule données par cet auteur. Pour ce qui concerne le *Ch. pilosus* Möbius, on n'en peut rien dire avec certitude, parce que la description de cette espèce est tout-à-fait insuffisante.

*Chordodes capensis*, nov. spec.

Deux exemplaires, ♂ et ♀. — Cap de Bonne Espérance (Horstock).

♂. Longueur m. 0,22. — Largeur m. 0,001.

♀. Longueur m. 0,24. — Largeur m. 0,0017.

Notes from the Leyden Museum, Vol. XVII.

L'extrémité antérieure est effilée, plus fortement chez la femelle que chez le mâle: l'extrémité postérieure de la femelle est arrondie, plus rétrécie que les autres parties du corps (m. 0,0012), et séparée de ce dernier par un rétrécissement évident, comme on observe dans la plupart des espèces du genre *Chordodes*. L'orifice cloacal est terminal.

Chez le mâle l'extrémité postérieure est amincie et présente sur le dos un sillon longitudinal médian, long à peu près un demi-millimètre; dans la partie inférieure le sillon est très-marqué et les deux bords sont enflés vers l'extrémité de l'animal. Ces bords sont très-convergents au dessus de l'orifice cloacal qui est ventral et se trouve dans le sillon à la distance d'un demi-millimètre de l'extrémité de l'animal.

Chez la femelle la couche cuticulaire extérieure est couverte d'aréoles papillaires, assez relevées, à contour presque rond, non festonné: parmi les aréoles on voit ça et là de petits tubercules ou prolongements réfringents. Les aréoles ont un canal intérieur plein d'une substance réfringente. Leur largeur varie entre 9 et 12 micromillimètres. Par-ci par-là huit ou neuf aréoles deviennent plus hautes et plus foncées et entourent deux aréoles de dimensions à peu près semblables, dont le sommet est recouvert d'une couronne de poils courts et très-fins. Quelques-uns de ces groupes présentent les aréoles médianes plus claires et pourvues de poils et de longs filaments plus gros.

Plusieurs aréoles papillaires simples présentent dans leur milieu un petit prolongement réfringent.

Chez le mâle la couche cuticulaire extérieure est pourvue d'aréoles papillaires semblables à celles de la femelle: les groupes sont moins évidents et je n'y ai observé aucune aréole centrale avec de longs prolongements. Il faut observer pourtant que l'exemplaire que je viens d'étudier s'était déjà reproduit et que probablement il était mort quand on le trouvait: il est donc possible que la couche cuticulaire extérieure fut déjà un peu modifiée.

Ces deux exemplaires sont d'un brun-foncé.

*Chordodes Modiglianii* (Camer.).

*Gordius Modiglianii* Camerano, Ann. Mus. civic. d. Genova, ser. 2<sup>a</sup>, vol. XII, 1892, p. 539.

Un exemplaire ♀. — Gorontalo: Célèbes (M. le Baron van Hoëvell).

Longueur m. 0,23. — Largeur m. 0,0015.

L'orifice cloacal est terminal: l'extrémité postérieure est arrondie et brusquement plus étroite que le corps.

Je profite de cette occasion pour noter que l'exemplaire d'Engano, que j'ai décrit dans la publication susindiquée en le considérant comme une femelle, est un mâle, d'après les caractères sexuels indiqués par Janda pour le genre *Chordodes* (Beiträge zur Systematik der Gordiiden. Zoolog. Jahrb. Vol. 7, 1894).

Turin, Avril 1895.

## NOTE II.

ON A NEW SPECIES OF THE FAMILY CICINDELIDAE  
FROM ARGENTINIA

BY

**Dr. WALTHER HORN.**

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*Cicindela Ritsemae*, n. sp.

E tribu *C. melaleucae* Dej., *Drakei* m., *Reedi* m., *Gormazi* Reed, *chiliensis* Brll. sed ab omnibus differt magnitudine minore, forma graciliore, elytris angustioribus, signaturis albis longitudinaliter juxta marginem confluentibus: laterali lunulae medianae parte marginem ipsum non attingente. — Long. 8—8½ mm.

Labro ut in *C. Drakei* m. formato; clypeo malisque pilosis, oculis paullo minus prominulis, fronte et ante et postice setis brevissimis hirsuta; thorace angustiore (quam in illa specie), ut longior videatur, marginibus et disco pilosis, basim versus perpaululum angustato; elytris minus latis, praesertim in medio minus dilatatis, longioribus, in angulo suturali fere rectangulari vix spinosis, subtiliter viridi-coeruleo punctatis, punctis aliquot majoribus viridibus aut viridi-aureis pone humerum et juxta suturam impressis, vitta laterali satis angusta plus minusve undulata et in angulo suturali paululum dilatata ab humero usque ad apicem producta (in quarta parte antica posticaque marginem ipsum attingente, in duabus partibus mediis spatio aliquanto ab hoc remota), hamulum brevissimum angustissimum pone humerum et fasciam flexuosam in medio intus emittente ornatis. Corpore inferiore lateraliter hirsuto, pal-

pis (summo apice exep̄to), trochanteribus, elytrorum episternis flavis. Tota obscure-aenea hinc inde cuprascens; femoribus, tarsis, antennarum articulis 4 primis viridescens; tibiis fere totis testaceis.

2 ♀ in montibus Argentinae (provincia Catamarca) legit 1893, Dr. H. ten Kate.

Approaches to *C. Drakei* m., but more elongate and narrower. The head and thorax are very finely sculptured and covered with short white bristles. The labrum is yellowish, short, transverse, not produced, forming in the middle a stout tooth with a more obtuse one on each side. The surface of the elytra is not very closely covered with small bluish punctures, larger greenish or coppery punctures exist near the base and parallel to the suture. The sutural angle is rectangular, the spine very short. The white markings are a little similar in form to *C. chiloleuca* Fisch., but the white border does not reach everywhere the margin, which is very characteristic. All the body dullish brown-coppery, the underside clearer; the femora tinged with golden-green, the greatest part of the tibiae and tarsi yellowish; the trochanters red. The sides of the cheeks, breast and abdomen clothed with white pubescence, the palpi and legs have tolerably many hairs.

Berlin, February 1895.



## NOTE III.

## SOME REMARKS CONCERNING THE ORANG-OETAN

BY

**Dr. F. A. JENTINK.**

May 1895.

About at the same time when we received Büttikofer's red-haired specimens of Orang-oetan <sup>1)</sup> from Borneo, I procured two dark-colored specimens, a female and a young, with their skeletons, collected near Sintang (Central Borneo).

As the dark-colored specimens have been looked upon by some naturalists as belonging to a different species, *Simia morio*, it is evident that I now reviewed our rather large material of the Bornean Orang-oetan: the Sumatran-specimens, being very badly represented in the collections, as they seem to be rare to be had in Sumatra, we may leave out of consideration at present.

The following are the supposed chief differences pointed out by the writers on the subject: a red color in *Simia satyrus*, a dark one in *Simia morio*; a nail on the thumb of the hind feet in the first, no nail on that thumb in the latter; besides differences in the bony parts especially of the skull.

Now it is a fact that the study of a large series clearly shows that none of the named characteristics may be called

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1) *Orang-oetang*, as some authors call the animal, is wrong as this means literally translated „a debtor”: *Orang* = man, person, and *Oetang* or *Hoetang* = debt. It should always be written *Orang-oetan*, as *Oetan* means forest, wood, wilderness. So there is a *Babi-oetan*, *Kambing-oetan*, a. s. o.

constant; there is an endless variation in tinge, from light red to dark brown-red, independent from age or sex or habitat; the nail on the thumb of the hind feet is present or wanting as well in red as in dark colored individuals; and the peculiarities of the skull are the most puzzling of all, no two skulls of the same age are alike, there is an endless variation of development in prognatism, in form, state of excavation and extension of the bony palate, in length of nasalia, in shape, size and position of the orbits, in development of the crista, which often is very prominent in small skulls, much less prominent or not present in large skulls, in size and shape of the lower jaw especially of its posterior half. And with all other characteristics it is always the same thing, f. i. with the length of the fur a. s. o., everywhere a very surprising inconsistency. In this point it is like in the human beings, no two persons are exactly alike. The reason for the Bornean Orang-oetan is perhaps this: that there are in Borneo no large carnivorous animals, no enemies to throw obstacles in the way of their existence, in one word there is no struggle for life, by which they would be forced to a development in a certain direction; they live more or less all under the same conditions, the equator crossing the middle of the island.

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## NOTE IV.

## ON GYMNURA ALBA GIEBEL

BY

**Dr. F. A. JENTINK.**

May 1895.

Mammals living in the tropics generally are greenish or blackish colored or have a lively reddish or red tinge; white mammals are great exceptions, nay there are only a few examples known, for instance the Madagascar *Propithecus sericeus*, the South American *Diclidurus albus*, the males of the Moluccan *Cuscus orientalis*. A highly interesting example of the kind is *Gymnura alba* known only from Borneo. It seems to be a rather rare animal like the other eldest known species of this genus, *Gymnura Rafflesii* <sup>1)</sup> from Malacca and Sumatra.

*G. alba* (Zeitschrift für die gesammten Naturwissenschaften, 1863, p. 277, T. 1, 2) is known from the northern parts of the island as well as from the southern, from British north Borneo and from Banjarmassing: in Büttikofer's collections is a specimen from Smitau, Central Borneo.

A superficial resemblance may have lead to the idea that this animal represents the albino-form of *G. Rafflesii*, it should however strike everyone that in no part of the large island of Borneo ever a dark specimen has been dis-

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1) It would be more correct to write *Gymnura gymnura* (Raffles), as Raffles called the by him described typical specimen, *Viverra gymnura*.

covered; indeed, a distribution of an albino-variety standing alone and at the same time altogether inexplicable!

That we have to deal here with more than a local variety appears if more closely examined; the white (*yellowish white* it is and not a pure white) animal is much larger and stouter in all dimensions, moreover there are several differences in the bony parts too, as I demonstrated in my former papers <sup>1)</sup> on the subject; a very important characteristic however hitherto not recorded is that in *G. Rafflesii* the claws of the fore feet are about *half the length* of the claws of the hind feet, in *G. alba* however the claws of the fore feet are very small, about *one fourth* of the size of those of the hind feet, so that in *G. alba* the fore-claws are not curved at all; they are too small.

It is a well known fact that *G. Rafflesii* is clothed with long hairs, especially on the back they attain a very large size; in *G. alba* however all the hairs are short, so that there is no trace of a kind of crista on the back as is to observe in *G. Rafflesii*.

Here are some dimensions of Büttikofer's specimen (alcoholic):

	Mm.
Length of head and body. . . . .	343
» » tail . . . . .	235
» » hind foot. . . . .	71
Distance from ear to eye . . . . .	25
» » eye to end of muzzle . . . . .	50

This specimen is a female and Büttikofer remarks that »*the iris is black*». True albino's have — as everybody knows — red or reddish eyes.

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1) Notes from the Leyden Museum, 1881 and 1885.

## NOTE V.

## DESCRIPTIONS OF EARTHWORMS

BY

**Dr. R. HORST.**

## IX.

ON TWO NEW BENHAMIA-SPECIES FROM LIBERIA.

(Plate 1).

*Benhamia liberiensis* n. sp.

Last year the Leyden Museum received from Liberia some large *Benhamia*-specimens, agreeing in size with *Benhamia Büttikoferi*<sup>1)</sup> from the same country; however after a careful examination they turned out to belong to a new species.

The largest specimen measures 350 mm. in length; its average diameter is about 10 mm., and it tapers only slightly within a few segments of the posterior end. There are about 250 segments, each divided by a ridge into two annuli; the setae are situated upon this ridge. The coloration of the worm is of a dark violet-brown, but the clitellum and the ventral side of the segments in front of it have a yellowish hue.

The clitellum extends over segments (XIII) XIV—XX; it is complete except on an oblong, rectangular, ventral area in the middle of segments XVII—XIX. The openings of the prostata-glands and the male pores, situated

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1) Notes Leyden Museum, vol. IX, 1887, p. 291, pl. 5.

within this depressed field, are connected by a brace-shaped groove, at the concave side of which lie two papillae (fig. 1); moreover another pair of papillae is to be found in the anterior and the posterior part of the area. These four pairs of papillae are even visible in badly preserved specimens, where the ventral area is hardly recognizable. In front of the clitellum three unpaired, transverse copulatory papillae occur in the ventral mesial line; they lie in the intersegmental grooves X/XI, XI/XII and XII/XIII, but are rather indistinct in some specimens. Dorsal pores present, but hardly visible.

Two pairs of spermathecal pores are situated in the intersegmental grooves VII/VIII and VIII/IX; the pores of each pair lie next to each other, upon a white area, in a position which corresponds to the interval between the ventral pairs of setae.

The setae are situated ventrally, visible behind the clitellum as four white spots; the interval between both ventral couples nearly equal to that between the ventral and dorsal ones. In front of the clitellum the ventral interval is smaller than the lateral one.

The penial setae, a fascicle of which arises next to each prostata-gland, present an appearance, quite different from that of the ordinary setae; they are of a golden yellow colour, except at the distal end. Each seta (fig. 2) is faintly bent, has a length of 3 mm., and is of about the same diameter over its whole length, except at the distal extremity, which is dilated like a spatula. The distal half of the seta is beset with small, densely crowded spines (fig. 2a).

Besides the penial setae our species possesses another kind of modified setae, which are situated in front of the anterior spermatheca and replace the ventral setae of segment VII; these copulatory setae are connected with the body-wall by a strong muscle-fascicle, and are accompanied by a glandular body, that has a pyriform shape and presents longitudinal grooves (fig. 4). Each copulatory seta is faintly curved like a penial seta, but is not so slender; its length is  $2\frac{1}{2}$  mm.

and it has about the same diameter over its whole length. Its distal extremity (fig. 3) shows a conical point and beneath this the seta is beset with circles of spines, over a third of its length.

The glandular body consists of two lobes, lying next to each other, but each of them is provided with a central canal, that opens next to a copulatory seta. The gland consists of club-shaped cells, resembling those of the prostata, which discharge their secretion into the central canal. In *Benh. Beddardi* <sup>1)</sup>, described by myself some years ago, the copulatory setae in the neighbourhood of the spermathecae are also joined by a glandular body, which however is much larger and consists of several lobes; its internal structure fully agrees with that of *B. liberiensis*, for each lobe possesses a central canal, which opens into the sheath of the copulatory setae.

There are two pairs of spermathecae, differing in shape from those of the smaller *Benhamia*-species; each of them (fig. 4) has a somewhat mushroom-like feature, and consists of a rounded vesicle, with irregularly folded surface and a short excretory duct. This duct shows at its anterior and posterior side an enlargement, upon which several wart-shaped excrescences are visible. Transverse sections of the duct (fig. 5) prove that those warts enclose small coeca, filled with spermatozoa; the lumen of the duct is strongly folded and gives rise to several tubular diverticles, which are dilated at their distal end and those vesicles contain the spermatozoa. It struck my attention, that the low epithelial cells, which as usually line those coeca, not only present very indistinct boundaries, but are nearly totally absent in some places, especially where the balls of spermatozoa are lying against the wall of the coeca. It seems to me very likely, that this epithelium presents a stage of degeneration, and this fact seems to favour the assertion of Beddard, made about the sper-

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1) loc. cit. vol. X, 1888, p. 123, pl. 6.

mathecae of *Acanthodrilus*, »that the spermatozoa become embedded in granular masses, which are formed by the metamorphosis of the lining epithelium of the spermathecal diverticula" <sup>1)</sup>). In the main pouch itself no spermatozoa were met with, only a granular coagulum was to be found. In *Dichogaster Damonis* <sup>2)</sup> the spermathecae have also a mulberry-like diverticulum, consisting of numerous small coeca, enclosed within a common muscular sheath. Likewise *Argilophilus* <sup>3)</sup> has the sperma stored in numerous chambers, embedded in the muscular layer of the duct; however Eisen does not describe nor figure any epithelium in these chambers. I cannot believe that it should be entirely wanting, perhaps the layer has been lost here, or has become so thin, that it was overlooked. The spermatheca of the allied *Benh. Beddardi*, is not only distinguished by its having the sperma contained in a couple of small diverticula at the sides of the duct, next to the external orifice, but is especially characterized by the structure of the wall of its excretory duct (fig. 6). This wall, as stated before, contains a great number of glandular tubes, which lie parallel to the longitudinal axis of the duct and enter its lumen in the vicinity of the spermathecal pore; whether some of these tubes communicate with each other, could not be recognized. The tubes are surrounded by a network of bloodvessels and two kinds of cells occur in their lining epithelium. In the superior region of each tube the epithelial layer consists of cylindrical cells with finely granular protoplasma, but the inferior part presents numerous pyriform cells, showing clear contents.

As regards the rest of the internal anatomy, this worm agrees with the other *Benhamia*-species. The prostata is a long, tubular gland, irregularly bent. The nephridia

1) Quart. Journal of Microsc. Science, vol. XXX, p. 466.

2) ibidem, vol. XXIX, p. 257, pl. XXIV, fig. 20.

3) California Eudrilidae; Memoirs California Acad. of Sciences, vol. II, 1894, p. 50, pl. XX, figs. 81—85.



are diffuse, especially developed in the clitellar region. The septa XI, XII and XIII are very thick and muscular.

The intestinal canal presents two gizzards in segments VII and VIII, and three pairs of reniform coeca in segments XV, XVI and XVII. The first of them, as usually the smallest, has a plain wall, but the two larger ones show shallow, horizontal grooves. The observation of Beddard with regard to *Microdrilus saliens* <sup>1)</sup>, that the three pouches of each side do not open separately into the gut, but communicate with the intestinal canal by one common duct, induced me to examine this structure in the present species. I was not little astonished to find about the same arrangement; each gland does not enter the intestine separately, but there is only a single duct, situated in the XVIth segment, which seems to belong to the foremost pouch, and the second and third coeca are connected with it by short tubes. I suppose that other *Benhamia*-species will show the same arrangement and I cannot therefore agree with Michaelsen's suggestion, that the two posterior coeca should have another function as the anterior one, because he usually found no carbonate of lime in them <sup>2)</sup>.

This species without doubt is nearly allied to *B. Beddardi*, which differs however by having *two* pairs of fascicles of copulatory setae unlike the penial setae. This character seems also to occur in the genus *Dichogaster*, for Michaelsen states about *Dichogaster Hupferi* <sup>3)</sup>, that to the spermathecae there are appended fascicles of copulatory setae, differing from the penial bristles; however the author makes no mention of a glandular apparatus.

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1) Proc. Zoologic. Society, 1892, p. 683, pl. XLVI, fig. 8.

2) Deutsch-Ost-Afrika; Regenwürmer, 1895, p. 26.

3) Jahrb. Hamburg. Wissensch. Anst. vol. IX, 1891, p. 66, pl. IV, figs. 31 and 32.

*Benhamia Stampflii*<sup>1)</sup> n. sp.

Among the *Benhamidae* from Liberia I met with a specimen, that not only differs in its external appearance from the preceding species, but also shows internal characters, for which it seems to me to belong to an other species.

It belongs to the larger *Benhamia*-species, its length being about 330 mm. The average diameter of the body is about 10 mm., and it tapers only near the caudal end. The number of the segments is no less than 425, so their longitudinal diameter is much smaller than in *Benh. liberiensis*. The colour of the worm is pale violet-brown at the dorsal, yellowish gray at the ventral side.

The intersegmental grooves and the dorsal pores behind the clitellum are very obvious. The cephalic lobe extends backward with a narrow part over the half of the buccal segment. The setae are ventrally; the interval between the ventral pairs is a little smaller than that between a ventral and a dorsal pair. The spermathecal pores are situated in the intersegmental grooves VII/VIII and VIII/IX, in a common groove, next to each other. The clitellum is distinct, wrinkled, occupying segments XIII—XXI. At the ventral side of segments XVI—XXI there is an area, having the shape of a reversed lyre; it is depressed in its anterior half, but appears not glandular in its posterior half.

There are two pairs of spermathecae, consisting of a globular sac, with a short excretory duct, bulged out at one side; I suggest that the spermatozoa are stored in this protuberance.

Each fascicle of penial setae contains two or three of them; they are about 3 mm. long, transparent, plain, without any ornament. Each seta has about the same diameter over its whole length, but suddenly becomes thinner near

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1) Named after Mr. Stampfli, the companion of Mr. Büttikofer in his exploration of Liberia.

its distal end, which is somewhat enlarged; highly magnified this enlarged extremity proves to have the shape of a concave chisel, resembling some Eunice-bristles.

The rest of its internal structure does not present any special points of interest and agrees mainly with that of *Benh. Schlegelii* <sup>1)</sup>. The intestinal coeca are rather large and show numerous foldings; each of them is separately connected with the intestinal canal.

June 1895.

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## EXPLANATION

OF

### Plate 1.

- Fig. 1. *Benhamia liberiensis* Horst. Ventral view of the anterior region of the worm, to illustrate the feature of the clitellar area.  $\times 2$  diam. *sp. p.* spermathecal pores; ♂ male pore.
- Fig. 2. A penial seta.  $\times 36$  diam.; 2 a distal extremity of the same, highly magnified.
- Fig. 3. Distal end of a copulatory seta.  $\times 90$  diam.
- Fig. 4. A spermatheca, with the fascicle of copulatory setae and the glandular body.  $\times 7$  diam.
- Fig. 5. A transverse section through the excretory duct of a spermatheca, to show the diverticula of the duct, filled with spermatozoa.  $\times 65$  diam.
- Fig. 6. *Benhamia Beddardi* Horst. A longitudinal section through the spermatheca, to show the glandular tubes of the excretory duct and the vesicles, containing the spermatozoa.
- Fig. 7. *Benhamia Stampflii* Horst. A spermatheca.  $\times 15$  diam.
- Fig. 8. A penial seta.  $\times 20$  diam.; 8 a the distal end of the same, highly magnified.

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<sup>1)</sup> Notes Leyden Museum, vol. IX, 1887, p. 252, pl. 4.

## NOTE VI.

ON SOME LANDPLANARIANS OF THE  
GENUS *BIPALIUM* FROM THE LEYDEN MUSEUM  
OF NATURAL HISTORY

BY

**Dr. J. C. C. LOMAN.**

(With two figures).

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Landplanarians are known from almost all parts of the world which have a hot but at the same time a damp climate. So they are met with in Brazil, in South-Africa, in South-Asia, in Australia and in New-Zealand, whereas in the colder regions of the globe merely few species exist.

They avoid direct sunlight and are only found in shadowed places, under stones, under the bark of trees, under rotten wood a. s. o., feeding on small snails and earthworms.

As to the anatomy and systematical position of the Landplanarians still much is to be done, most of them being unsatisfactorily described. The anatomy of but very few forms has been worked out, and of the greater part the inner structure is totally unknown. At the present time, considering the Landplanarians as a Family, perhaps about ten Genera are to be discerned, but still very little can be said of their mutual relation. Among these genera are three, viz. *Geoplana*, *Rhynchodemus* and *Bipalium* with many species, most of which are only described as to their lengths, the number of their eyes, the form and colouring of their bodies and the stripes which mark their backsides.

Notes from the Leyden Museum, Vol. **XVII.**

A careful examination of many species, and, in the first place, a minute comparison of their anatomy, will undoubtedly lead to a good systematical division, which at this moment cannot yet be given.

The genus *Bipalium*, which is characterized by a well-developed semilunar head with numerous eyes, occurs in South- and East-Asia and in the Malay Archipelago. A single species, *Bipalium kewense*, found in 1878 by Moseley in a hot-house in Kew-Gardens and undoubtedly imported together with exotic plants, has since been found in Berlin, Sydney and Cape-town: its original habitat however is still unknown.

The genus *Geoplana* has been found in Asia, Australia, South-Africa and South-America in numerous species and it misses the lunate head of *Bipalium*, the forepart being mostly obtusely rounded. It agrees with *Bipalium* in having many eyes.

As for *Rhynchodemus*, the genus with only two eyes and a body gradually tapering at the two ends, many new species were, during the last years, recorded from different parts of Australia, besides the already known species from North- and South-America, Eastern Asia, Samoa and South-Africa.

Prof. Dr. L. von Graff in Graz, who is at this time preparing a monograph of the Landplanarians and who, for this purpose, has been collecting a huge stock of specimens from all parts of the world, announces in a small paper <sup>1)</sup> 125 species belonging to *Geoplana*, 72 to *Rhynchodemus* and 74 to *Bipalium*. Considering these large numbers, we should not wonder but a careful examination of so many forms of different localities will considerably increase our knowledge. Prof. von Graff kindly wrote to me, that his investigations urged him to divide the Landplanarians (Terricola) into 5 Families with 18 Genera.

1) L. von Graff. Die von Dr. E. Modigliani in Sumatra gesammelten Landplanarien, in: Annali del Museo Civico di Storia Naturale di Genova. 2e Ser. Vol. XIV, 1894.

In the following lines I shall give an account on several species of the Leyden Museum belonging to the genus *Bipalium*, all of which were obtained from Java or the neighbouring isles. Among them two species proved to be new to science.

1. *B. marginatum* K. & v. H.

This species was first described and figured in a previous communication <sup>1)</sup> from a specimen said to have been captured in the forests of Bantam in West-Java (1822). Afterwards (1888) it has been found at Buitenzorg by Prof. Max Weber, who brought home several specimens from his journey. A specimen, now in the Leyden Museum, has been collected in 1890 by Dr. J. F. van Bemmelen in the same locality.

2. *B. javanum* Loman.

The area of distribution of this common species is remarkably well defined and seems to be rather small. It has been found in great abundance only in the dark forests of the mountainous parts of West-Java and in those of the isle of »Dwars in den weg» in the Sunda-strait, geologically belonging to West-Java. Neither on the volcanoes of Middle-Java, nor on those of East-Java a single specimen could be taken.

One specimen collected by myself in South-West-Java in 1882.

3. *B. vittatum* K. & v. H.

This species <sup>2)</sup> seems to inhabit the descents of the West-Java mountains in the lower districts, f. i. Buitenzorg, where the preceding species is very rare. I never met with it in higher regions.

Many specimens caught by Dr. J. F. v. Bemmelen in 1890.

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1) Loman. Ueber den Bau von *Bipalium*, etc. in: Bijdragen tot de Dierkunde, uitgegeven door het Genootschap Natura Artis Magistra. Afd. 14, 1887, p. 65 (and »Nachschrift»), pl. I, fig. 6.

2) l. c. p. 84, pl. I, fig. 5.

4. *B. Simrothi*<sup>1</sup>), n. sp. (fig. 1).

This Bipalium belongs to the species with a short and broad body and has a well-developed head, which does not surpass the breadth of the whole body, being only 6 mm. The colour of the back is of a very dark brown, almost black, with a reddish-brown pattern. The latter consists of a narrow longitudinal stripe, originating from two large lateral spots on the head and running to the tail of the animal, the last third being abruptly enlarged to an almost oblong quadrangle. Five transverse bands of the same colour occur between the head and the quadrangle, of which the third does not reach the sides of the body.

Ventral colouring with the broad ambulacral line of a yellowish white. The mouth lies on the middle, the genital aperture on about two thirds of the entire body-length.

Length 26 mm.; greatest breadth 7 mm.

A single specimen captured in 1894 by Mr. A. L. van Hasselt on the Natuna-islands in the Southern Chinese Sea.

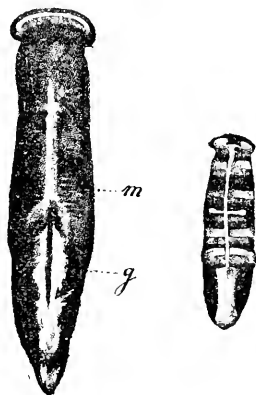


Fig. 2.

Fig. 1.

*B. expeditionis*  $\times 2\frac{1}{2}$ . *B. Simrothi* nat. size.

m. mouth; g. genital aperture.

1) On asking Prof. von Graff whether this species was also new to him, he informed me that it had already been described and figured by him under the name of *B. Simrothi*, but that it was not yet published. For this reason I feel obliged to accept this name.

5. *B. expeditionis*, n. sp. (fig. 2).

The body of this little new species is, like that of the foregoing, short and broad; the head of the spirit specimen of only moderate size, transverse-oval (probably by contraction). Ground colouring dark brown on the back, beneath of a light brown, but undoubtedly still much clearer in the living animal. The upper side is marked with an irregular median dirty yellow band, narrow at the beginning, about one fourth of the entire length behind the head, broader at the latter half and abruptly broken up by the ground colour in the middle and near the end. A very narrow median black stripe is seen within the yellow band just above the spot where the genital organs lie. On the head is found a sub-marginal line of the same yellow colour and moreover extremely faint indications seem to be the traces of two transverse bands on the forepart of the body.

Length 21 mm.; greatest breadth 5 mm.

The animal was captured on the summit of Mount Damus in the heart of the Sambas-district (Residency of West-Borneo) by Dr. Nieuwenhuis, one of the members of the recent Dutch scientific Borneo-expedition.

Amsterdam, May 1895.



NOTE VII.  
TWO NEW SPECIES  
OF THE LONGICORN GENUS PELARGODERUS

DESCRIBED BY

C. RITSEMA Cz.

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*Pelargoderus cincticornis*, n. sp. ♀.

Very closely allied to, and strongly resembling *P. bipunctatus* Dalm., but at once distinguished from that species by the antennae being annulated with grey and black.

Length 32 mm. — Black; covered with a short olive-brown pubescence which is slightly darker on the elytra; the latter have each a small glabrous spot just behind the middle and are speckled with fulvous; the head is variegated on the mandibles, face, cheeks and vertex with small spots of a coarse fulvous pubescence which likewise covers the scutellum except a glabrous stripe at the middle of its base; the antennae are covered with a dense grey pubescence, the 3rd and following joints ringed with black at the apex.

The head shows a few punctures on the face and cheeks, a raised smooth line runs along the middle of the face and a longitudinal furrow is present on the vertex. The prothorax is distinctly corrugated between the anterior and ante-basal groove, and provided on each side with a small but distinct tooth. The sides of the scutellum are convergent towards the apex which is broadly rounded. The elytra are granulate at the base, further on they are

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covered with distinct punctures which become smaller towards the end; the apices are obliquely truncate, the sutural angle is rounded, the outer angle produced into a point. Body beneath, legs and antennae impunctate.

*Hab.* Borneo occ.: Sambas. — One female, captured and presented to the Leyden Museum by Dr. J. Bosscha.

*Obs.* The described specimen is remarkable for its having the three apical joints of the left antenna doubled, and the apex of the 8th joint slightly bifurcate.

*Pelargoderus marginipennis*, n. sp. ♀.

A very distinct species, easily recognizable by the glabrous elytra which are surrounded (except at the base) with a dense yellowish white pubescence.

Length 29 mm. — Black; the head glabrous, variegated on the face, cheeks and vertex with small spots of a dense yellowish white pubescence; a similar spot is present on the base of the mandibles; antennae, thorax, legs and abdomen covered with an extremely short and loose grey pubescence; on the apical portion of the antennal joints this pubescence is infusate; the scutellum is covered with a dense yellowish white pubescence, but shows a glabrous line along the middle of the basal half; the elytra are glabrous and shining, except along their sutural and lateral margins where a dense yellowish white pubescence is present.

The head shows a few deeply impressed and irregularly spread punctures on the face and cheeks (those on the face are larger), and a deeply impressed groove along the middle of the vertex. The scape of the antennae is finely punctured. The prothorax is slightly corrugated and sparingly punctured above and shows scarcely any trace of a lateral tooth. The scutellum is parallel-sided, and broadly rounded behind. The elytra are granulate at the base, the granules followed up by large, deeply impressed punctures which, however, become evanescent towards the end; the

apices are separately and rather narrowly rounded. Body beneath and legs impunctate.

*Hab.* The island of Engano, South West of Sumatra, where the species was found by Dr. Modigliani. The described specimen has been presented to the Leyden Museum by Dr. R. Gestro of the Civic Museum of Natural History at Genoa.

Obs. Since the publication (1873) of the 10th volume of the »Catalogus Coleopterorum», five other species have been described in the genus *Pelargoderus*, viz.:

*P. vitticollis* Thoms., Ann. Soc. Ent. France, 1878, Bull. p. XVIII (*Rhamses*) . . . . . Borneo.

*P. rugosus* C. O. Waterh., Proc. Zool. Soc. London, 1884, p. 218. . . . . Timor-Laut Islands.

= *Pelargoderus* (*Paragnoma*) *acuminipennis* Blanch.,  
teste Gahan, Ann. & Mag. Nat. Hist. (6) vol. II,  
1888, p. 400.

*P. semitigrinus* Rits., Notes Leyd. Mus. Vol. VII, 1885, p. 43, pl. 3, fig. 3. . . . . Sumatra.

*P. flavicornis* Gahan, Ann. & Mag. Nat. Hist. (6) vol. I, 1888, p. 272, pl. 16, fig. 3. . . . . Nias.

*P. antennatus* Gahan, Ann. Mus. civ. Genova, ser. 2<sup>a</sup>, vol. XIV, 1894, p. 34. . . . . Burma.

Finally it may be mentioned here, that a good figure of *P. meleagris* Pasc., from Celebes, has been published in 1888 in C. O. Waterhouse's »Aid to the Identification of Insects», pl. 180, fig. 3.

Leyden Museum, March 1895.

## NOTE VIII.

EINIGE BEMERKUNGEN  
ÜBER NEU ANGEKOMMENE PARADIESVÖGEL

VON

J. BÜTTIKOFER.

Vor Kurzem erhielt unser Museum eine Anzahl Paradiesvögel vom Goenong Tobi, Nordwest-Neuguinea, worunter sich ausser einem alten Männchen von *Amblyornis inornata* Schleg. und einem andern von *Pteridophora Alberti* Meyer auch eine in der Färbung ganz abweichende *Craspedophora magnifica* (V.) und vier Exemplare von *Parotia Carolae* Meyer befanden.

Das Exemplar von *Craspedophora magnifica* erinnert in seinem eigenthümlichen Färbungszustande an Albinismus, mit dem Unterschiede jedoch, dass in diesem Falle das Gefeder nicht weiss, sondern grau erscheint. Die Struktur der Federn in den verschiedenen Partieen ist durchaus dieselbe wie beim normalen Vogel, die Farbe aber so verändert, dass man zu glauben versucht ist, dass der Vogel längere Zeit im Spiritus gelegen habe. Dies ist jedoch unmöglich, weil der Metallglanz des Kehlschildes, der Kopfplatte und der mittleren Schwanzfedern bei normalen Exemplaren durch Spiritus keineswegs alterirt wird.

Die ganzen Flügel, sowie auch der Schwanz, sind hell aschgrau; die Schwungfedern haben alle einen schmalen, schwarzen Aussensaum. Auf den inneren Schwung- und einzelnen Deckfedern befinden sich einzelne kleine, schwarze Flecke, welche als die Ueberreste der originellen schwarzen Farbe betrachtet werden müssen. Aehnliche kleine Flecke,

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welche an einer Stelle sogar den grünen Metallglanz zeigen, finden sich auch auf den mittleren Schwanzfedern. Hinterhals, Rücken und Bürzel sind etwas dunkler grau; jede einzelne Feder dieser Stellen hat einen ziemlich breiten, dunkelbraunen Endsaum. Die Kopfplatte und das Kehlschild, beide beim normalen Vogel metallisch grün, haben bei unserem abnormalen Exemplare deutlich dieselbe schuppige Struktur, doch sind sie oliven-graubraun mit einem schwachen Anflug von Bronzebraun. Zügel, Wangen, Bartstreif, Kopf- und Halsseiten haben den violetten Glanz wie beim normalen Vogel, aber etwas schwächer. Auch das schmale Querband, welches sich an den Hinterrand des Kehlschildes anschliesst, ist vorhanden, doch hebt es sich kaum merklich von der Umgebung ab; Brust, Bauch, Flanken und die unteren Schwanzdecken sind oliven-schwarz-braun und zeigen nur in sehr geringem Maasse die warm violette Färbung des normalen Vogels. Die Unterseite der Flügel ist einfarbig grau, die unteren Flügeldecken sind braunschwarz. Grösse und Schnabelform normal.

Von den vier Exemplaren (alle vier Männchen) von *Parotia Carolae* sind zwei ganz alt und zwei mitten im Uebergang. Die beiden alten Männchen stimmen mit Dr. Meyer's Beschreibung und Abbildung <sup>1)</sup> völlig überein, doch möchte ich hier auf eine treffende Eigenthümlichkeit in Bau und Anlage des Kopfschmuckes aufmerksam machen, die von Dr. Meyer augenscheinlich übersehen worden ist. Dr. Meyer beschreibt diesen Kopfschmuck, für sofern es die vorderen Parteen des Oberkopfes betrifft, wie folgt: »Von den Nasenlöchern bis zur Augengegend erhebt sich jederseits ein Federkamm in der Farbe der Oberseite, aber mit silberweissen, nach innen gebogenen Spitzen, vorn in der Mittellinie zusammenstossend, nach hinten aneinandergehend, der ganze Vorderkopf bedeckt von einer Platte glänzend goldockerfarbener Federn mit verdeckten schwarzen Basen,

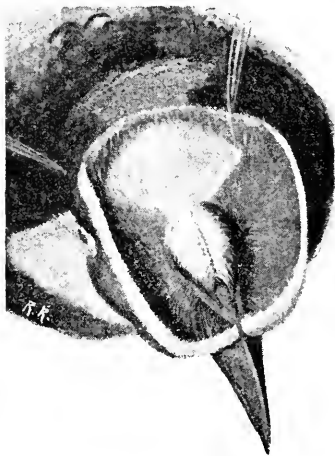
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1) Abh. u. Ber. K. Zool. u. Anthrop.-Ethnogr. Mus. Dresden, 1894/95, N<sup>o</sup>. 5, p. 8, Taf. II.

die hinteren Federn an den Spitzen ins Kupferfarbene ziehend."

Diese Beschreibung ist durchaus richtig, bedarf aber der folgenden Ergänzung:

Der seitliche Federkamm, der hinten auseinandergeht und die breite goldbronzefarbene Scheitelplatte zu Tage treten lässt, kann nach Willkür auch vorn auseinandergeschlagen werden, und es wird dann mitten in dem dadurch entstehenden, tellerförmigen Diadem, unmittelbar vor der gelben Scheitelplatte, ein Büschel von ebenfalls aufgerichteten und einwärts gebogenen Federn mit silberweissen Spitzen sichtbar, der infolge der convergirenden Form der Federn eine kugelige Form hat und mit einer grossen Perle verglichen werden könnte, welche die Mitte der prachtvollen, silberumrandeten Krone ziert. Im Gegen-



sätze zu den Federn des äusseren Kronenrandes, welche hinter den Nasengruben entspringen und von welchen die vorderen derart nach vorn gerichtet sind, dass sie die Nasengruben ganz bedecken, haben die Federn des centralen Büschels ihren Ursprung beidseitig auf dem zwischen den Nasengruben liegenden Basisende der Schnabelfirste, sind nach hinten gerichtet und wölben ihre convergirenden weissen

Enden so dicht zusammen, dass die langen glänzend violetten Basisenden der nur an ihrer Spitze goldbronzefarbigten Scheitelfedern, welche zwischen ihnen mitten auf dem Schnabelrücken entspringen, gänzlich verdeckt werden. Die innere zweizeilige weisse Federpartie ist von der äusseren durch eine nackte Hautstelle getrennt, welche sich von der grossen Nasengrube aus wie ein Keil zwischen beide einschiebt. Nur die Federn der vorderen Hälfte des

äusseren Kronenrandes haben weisse Spitzen; bei der hinteren Hälfte aber, welche die goldgelbe Scheitelplatte einschliesst, sind die Spitzen bronzebraun <sup>1)</sup>).

Die beiden Männchen im Uebergangskleide sind namentlich deshalb interessant, weil sie uns einen Schluss auf das Aussehen des bis jetzt noch unbekannten Weibchens ziehen lassen. Da die jungen Männchen bei den beiden übrigen Arten dieses Genus sich in der Farbe nicht von den Weibchen unterscheiden, dürfen wir mit ziemlicher Sicherheit das nämliche auch bei dieser Art voraussetzen. Unsere beiden Exemplare befinden sich in einem und demselben Uebergangsstadium, d. h. mit gänzlich ausgefärbtem Kopf und völlig entwickeltem Kopfschmuck, während von dem ganzen übrigen Gefieder nur der Flügelbug und äussere Flügelrand mit Einschluss der beiden ersten Schwungfedern durch ihre sammtschwarze Farbe das alte Männchen verrathen. Die ganze Oberseite mit Ausnahme des Kopfes ist bei diesen jungen Vögeln olivenbraun mit starker Neigung zu olivengrün, und unterscheidet sich dadurch wesentlich von den rothbraunrückigen Weibchen und jungen Männchen von *P. searpennis* und *P. Lawesi*. Die Flügel und auch der Schwanz sind etwas dunkler als der Rücken gefärbt; überdies zeigen die Handschwingen und grossen Flügeldecken auf ihrem Aussenrande eine stark ausgesprochene rothbraune Farbe. Auch die Innenfahnen der inneren Hand- und sämtlicher Armschwingen sind von ihrer Basis ab bis nahe an die Spitze oben und unten von derselben Farbe. Die ganze Unterseite mit Einschluss der unteren Schwanzdecken ist rostfalsb, bedeutend heller als beim Weibchen von *P. Lawesi*, mit zahlreichen schwarzen Querbinden, die sich in Breite und gegenseitigem Abstand nicht von denjenigen der beiden andern Arten unterscheiden. Die unteren Flügeldecken sind hell rostfarbig und zeigen weniger Querbinden als die Brust.

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1) Infolge eines Versehens ist die Textfigur etwas kleiner als natürliche Grosse geworden, im Uebrigen ist sie eine genaue Illustration des Scheitelschmuckes.

Bei den beiden alten Männchen und einem der jungen ist die Krone ausgebreitet wie oben beschrieben, nur bei einem der jungen ist sie vorn geschlossen wie in Dr. Meyer's Abbildung.

Leyden Museum, Mai 1895.



## NOTE IX.

ON TWO MAMMALS  
FROM THE CALAMIANES-ISLANDS

BY

**Dr. F. A. JENTINK.**

June 1895.

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*Mydaus meliceps* Cuvier.

The study of the geographical distribution of the Mammals over the islands of the Malayan Archipelago teaches us the fact that only a very small number of species is common to Sumatra and Borneo and at the same time to Java. The most interesting species among them is without question *Mydaus meliceps*, as it presents a most singular fact in its local distribution, as it is confined exclusively to high mountains and never seems to visit the plains<sup>1</sup>). It causes extensive injury to the plantations and it infects its vicinity by projecting a fetid matter of a very violent odour: two reasons why it is very hated by the inhabitants so that it never would come in any one's head to bring the animal over from Sumatra to Borneo or Java, or vice versa. We must look upon it as if a relic from a

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1) See Dr. Horsfield, Zoological researches in Java and the neighbouring islands, 1824.

former fauna, by submersion of the land perhaps, pushed towards the elevated countries, the mountains.

Since more than seventy years the *Teledoe*, *Seng-goeng* or *Teleggo*, indigenous names for the animal, has been known from Java and Sumatra; the first specimen from Borneo, however, has been procured — as far as I am aware — by Mr. C. Bock from East-South-East-Borneo, and is in the Leyden Museum since 1879 (see my Catalogue Systématique des Mammifères, 1892, T. XI, p. 134), meanwhile some years ago Mr. Everett has met with it in North Borneo.

According to Mr. Everett's paper in the P. Z. S. L. 1889, »on the Zoogeographical relationships of the Island of Palawan and some adjacent Islands'', a *Mydaus*-sp. (?) is known to exist in the Palawan-group; Mr. Everett however observes: »this animal has never been actually obtained, I believe, by any collector, but it has frequently been described to me by Europeans as well as by natives."

The evidence that a *Mydaus*-species actually is living in the Palawan-island grows, as I at present have to record a new and very interesting locality where the *Teledoe* occurs, namely the Calamianes-islands, lying between Palawan and Mindoro, in the Philippine-Archipelago. One specimen, a male, has been presented by Dr. Schadenberg to our Museum. It induced me to review our material and to study what has been published relating *Mydaus meliceps*.

It seems that the white line along the middle of the back is subject to rather great variation: from our large series of Java-specimens I conclude that the typical mode of coloration is, in young ones, an uninterrupted white band from the large white spot on the crown of the head to the root of the tail; this white band grows more or less inconspicuous in elder individuals and disappears in very adult ones entirely, merely leaving on the haunches a narrow white line. In some halfgrown individuals the white back-band is once or repeatedly broken off, mean-

while in a nearly adult specimen this band is very complete and extremely broad. A more than halfgrown specimen in our collection presents the following mode of coloration: on the nape a white triangle with its top towards the back, from the middle of the base of this triangle a white line runs for about half an inch towards a crista between the eyes, and from the top of the triangle goes a white line diminishing in width to about half the middle of the back of the animal, leaving no trace of white on the haunches.

Our Java-specimens show the typical brown color growing sooty brown in adult animals. I fail to detect sexual differences in the mode of coloration. As a rule the extremity of the tail is white, the basal part is colored like the rest of the body; one of our specimens, a nearly fullgrown male, has the basal part of the tail white like the rest of that organ.

Our skulls of *Mydaus*-specimens from Java present very striking and difficult to understand peculiarities, namely small skulls make the impression as if they are elder than much larger ones; so a skull long 82 mm. and broad 40 mm. has all the bones ankylosed, so that nowhere a trace of a suture is to be detected, meanwhile another much larger skull long 92 mm. and broad 44 mm. shows very distinctly all the separate bones. Have we here perhaps to deal with constant local varieties born by permanent isolation?

Specimens from Sumatra are unknown to me by autopsy and nothing has been recorded concerning differences in development of the skull in the sense above mentioned. Raffles related that one line of white runs along the back, which covers the whole crown of the head and becomes narrower as it runs backward to the tail, which is also white; the rest of the body is of a *dark-brown* color. Dr. J. E. Gray <sup>1)</sup> calls the Sumatra-specimens of the

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<sup>1)</sup> Catalogue of Carnivorous, Pachydermatous and Edentate Mammals in the British Museum, 1869, p. 131.

British Museum, which seem to vary in the extension of the white dorsal line like our Java-specimens, *brown* colored.

Mr. Charles Hose gives in his very important paper, entitled »a descriptive account of the Mammals of Borneo“, the following definition of the color of Everett's *Mydaus*: »Back *black*; crown white, reaching to the middle of back.“ No word about size of the animal or skull.

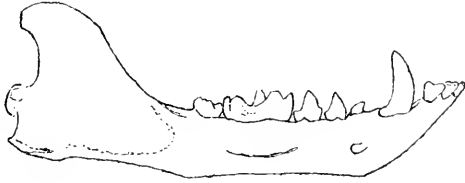
The back of our specimen from E.-S.-E. Borneo has a *black* color; the fur is coarse and very short for a *Mydaus*-specimen of such a rather small size; the large white crown-spot reaches not beyond the shoulderblades, a very narrow white line from the middle of the back to the root of tail, basal part of tail black like the back, end of tail white. This specimen, a female, makes the impression as if halfgrown, as it measures from tip of muzzle to root of tail about (it is a stuffed specimen) 37.5 cm., an examination of its skull shows however that it is by far not what it exteriorly let suppose, for, as all the bones are firmly ankylosed, it ought to belong to an elder specimen although it is in all dimensions of the same size as a halfgrown Java-individual. Compared with the above mentioned large skull with distinctly visible sutures, we note the following measurements:

	Java-skull.	Borneo-skull.
greatest length . . . . .	92 mm.	84 mm.
» width . . . . .	44 »	42 »
length of bony palate. . .	47 »	42 »
» » lower jaw. . . . .	58 »	54 »

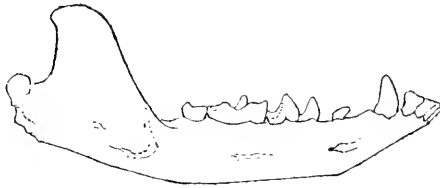
Of a very great importance are the lower jaws: the figures (see next page) present the differences in size and shape very distinctly, the uppermost figure is that of the Java-skull, the lower one that of the Borneo-skull. The dentition demonstrates that in fact the smallest skull is the eldest, all the teeth being more used off.

Finally our specimen from the Calamianes-islands. It

measures about 37 cm. (it was a skin without bony spine) that is of the same size as our Borneo-specimen; its skull has been smashed and was for the rest in a very bad state of conservation as it evidently has been preserved in a liquid which attacked and softened the bones.



The fur is much longer than that of the Borneo-*Mydaus* and, contrary to the harsh fur of the latter, very soft to the touch. The color of the back is black,



only a very few here and there scattered white hairs are to be detected where in all the specimens from the above named localities the large crown-spot adorns the head; no trace of white line along the middle of the back, no white tip to the tail, all those parts being of a uniform black like the rest of the back.

As I observed above, the skull has been smashed, the unbroken anterior part however leaves not in doubt, the dentition moreover can prove it, that the animal is a full grown one. And now it appears, that the skull is much smaller in all dimensions, nay still smaller than the above discussed Borneo-skull. The lower jaw (see the figure) measures not more than 46 mm.; its basal part describes a curved line such like in the lower jaw of the Borneo-



skull, indeed a striking difference between these skulls and the Java-one, of which a figure of the lower jaw above. Compared with the other ones the Calamianes-skull has

the anterior half a good deal shorter, the hindmost upper molar is stouter and of a relative larger size, the hindmost lower molar is stronger and the penultimate lower molar is a much more developed tooth: it measures 9 mm. in the large Java-skull, 8 mm. in the smaller Borneo-skull, and 10 mm. in the still much smaller Calamianes-skull!

The claws of the Calamianes-specimen are less developed and do not attain the enormous size as in specimens from other localities.

In conclusion I do not know whether the Sumatra-*Mydaus* differs from the Java-*Mydaus meliceps*, I am inclined to believe that the Borneo-*Mydaus* may perhaps belong to an other, although to *Mydaus meliceps* closely allied species, but it seems to me that the Calamianes-*Mydaus* differs in so many points — in size, color, skull and dentition — that it deserves to be separated under a new specific title. I propose to call it *Mydaus Schadenbergii* after its discoverer.

The geographical range of the genus *Mydaus* is so far as we at present know: Java, Sumatra, Borneo, Palawan? and the Calamianes-islands.

### *Herpestes brachyurus* Gray.

Described in 1837, recorded in 1846 from the Malayan Peninsula and in the Zoology of the Samarang in 1850 from Borneo, the first specimen of this species from Sumatra reached Europe in 1888; it had been collected by Dr. Hagen in Siak and is since in our Museum (N. L. M. 1889, p. 23). In P. Z. S. L. 1889, p. 223, *H. brachyurus* has been enumerated by Mr. Everett among the mammals which are known to exist in the Palawan-group. Where a specimen from the latter locality has been preserved for control of that statement I do not know, but certainly not in the British Museum, as Palawan is a locality that

I fail to detect in the list of the specimens of *H. brachyurus* in the British Museum, kindly sent to me by Mr. Oldfield Thomas.

Together with the *Mydaus*-specimen Dr. Schadenberg presented to our Museum a *Herpestes*-specimen from the same interesting locality — the Calamianes-islands.

This specimen is of about the same size as an adult *H. brachyurus*-specimen and differs from all other *Herpestes*-species together with *H. brachyurus* by its short tail.

Although our Sumatra-specimen seems to be somewhat darker colored than our Borneo-individual from Büttikofer's collections, and its skull (both specimens are apparently fullgrown) somewhat smaller, I think there can be no doubt as to their specific identity.

The Calamianes-specimen, however, presents a less dark colored hue, the extremities are not black, and the light rings which produce the grizzled appearance are of a reddish brown; the tail is less hairy, meanwhile these hairs are of a blackish brown color. The named differences in mode of coloring may be unimportant, I confess it, but together with striking differences in the bony parts they become of more significant value.

That the Calamianes-specimen is very adult, is proved by the ankylosed skull-bones, but above all things by the very wearied out condition of the dentition and by the absence of some small teeth; even no trace can be detected of the alveoles of three wanting upper and lower incisors and of the absent anterior small upper and lower premolars. And this very old skull is a good deal smaller than the skull of our old <sup>1)</sup> Sumatra-specimen, as the following figures may illustrate:

	Sumatra-sp.	Calamianes-sp.
greatest length of skull. . . .	91 mm.	76 mm.
» breadth of braincase . . .	34 »	31 »

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1) It is so old, that the midmost right upper incisor and the first right premolar have fallen out and their alveoles are filled up by bony substance.

		Sumatra-sp.	Calamianes-sp.
length of upper molar series <sup>1)</sup> .	. .	31 mm.	25 mm.
» » lower » »	. .	32.5 »	28 »

We actually have to deal here with a smaller form of *H. brachyurus* in accordance with the smaller island where it is living. If it deserves a distinct name, it may be called *H. parvus*.

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1) Taken from the posterior basal part of the canine.



## NOTE X.

A NEW SPECIES OF THE GENUS HELOTA  
FROM THIBET

DESCRIBED BY

**C. RITSEMA Cz.**

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*Helota thoracica*, n. sp. ♀.

Very closely allied to *Helota Feae* Rits. from Burma <sup>1)</sup>, but distinguished by the coarser punctuation of the elytra, which have moreover their apices not produced into a point, by the less distinctly truncated apex of the last ventral segment, and by the narrow and ill-defined red streak along the sides of the pronotum.

Length 15 mm. — The colour of the upper surface is dark bronze, blackish around the four yellow elytral spots which are small and strongly convex; the antennae are reddish testaceous, somewhat darker towards the club which is pale brown; an indistinct reddish testaceous narrow streak runs along the lateral margins of the pronotum. The colour of the underside is reddish testaceous, with the exception of the head (the throat alone shows this colour), a streak surrounding the anterior coxae, and the elytral epipleurae, which parts are of a bronze colour; the legs are reddish testaceous, with the trochanters, the apex of the femora, the base and apex of the tibiae, and the tarsi (with the exception of the basal half of the claw-joint) dark pitchy or black; an infusate stripe is present along the upperside of the anterior femora.

Head strongly produced in front of the eyes, slightly raised along the middle, deeply punctured, the punctures in the raised middle portion large and rather distant, near

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1) Ann. Mus. Civ. Genova, ser. 2a, vol. X, p. 886 (1891).

the eyes they are smaller and placed very close together, on the front portion they are smallest; underneath the brassy middle portion shows a few deeply impressed punctures.

Prothorax widest at the base, narrowing towards the front margin in regularly curved lines; the lateral margins distinctly crenulate; the front angles produced and rounded; the base deeply bisinuate, the lateral angles acute, the middle lobe rounded and with a small impression; the disk strongly and regularly closely punctured, with the usual raised impunctate patches, viz. a mesial forked one, extending from the base on to the front margin, an elongate slightly oblique basal one on each side of the former, and an ovate one in front of the oblique basal patches. The scutellum is small, transverse, and slightly impressed along the middle. The sterna have a few punctures at the sides.

Elytra nearly parallel, rounded posteriorly, slightly dehiscent at the suture; each elytron with ten regular, punctured striae of which the 4th and 5th are interrupted by the yellow spots and are not continued behind the posterior pair; the punctures of the 3rd and following striae are distinctly larger and deeper than those of the 1st and 2nd, those of the 5th and 6th striae are transverse; the interstices between the 5th and 10th striae are very narrow and costiform, and alternately more strongly raised and extending farther backward; the interstice between the 2nd and 3rd striae becomes costiform towards the end, and extends down to the apical margin of the elytra; the epipleurae are impunctate.

Abdomen smooth, with a few minute, hair-bearing punctures along the middle; the last ventral segment subtruncate at the apex, the truncation faintly bisinuate.

The legs are smooth and impunctate, the anterior tibiae slightly curved.

*Hab.* Thibet: Siao-Lou. — The described female specimen is in the collection of Mr. René Oberthür.

Leyden Museum, April 1895.

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Notes from the Leyden Museum, Vol. XVII.

## NOTE XI.

ON SOME BRENTHIDAE  
COLLECTED BY MR. H. FRUHSTORFER IN JAVA

BY

**Dr. ANGELO SENNA,**

Assistant in the R. Museum, Florence.

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Through the courtesy of my colleague Mr. C. Ritsema, I have had the opportunity of examining several Brentheids taken in Java by Mr. H. Fruhstorfer and recently acquired by the Leyden Museum. Among them, there are two species found for the first time in Java and, moreover, a *Pseudorychodes* new to science. The publication of the description of this latter offers me the occasion of publishing the list of all the species contained in this lot, to which I have added those existing in the collections of the Brussels Museum. Some time ago, Dr. H. J. Kolbe published <sup>1)</sup> two new javanese Brentheids, viz. *Hoplopisthius javanus* Kolbe and *Carcinopisthius Fruhstorferi* Kolbe, obtained by the above named naturalist and belonging to the collection of the Berlin Museum, but these species are not represented amongst the specimens examined by me.

1. *Sebasius laetus* Senna, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. XII, p. 441, 1892. (sub *Zemioses*).

Western Java (Pengalengan, 4000').

The single specimen sent to me is referred by me with some doubt to this species.

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1) Stettiner Entomol. Zeit., 1892, p. 173.

The prothorax and the elytral interstices are scattered with short hairs as in well preserved specimens. The apical joint of the antennae is slightly shorter than in a specimen from New Guinea which I have under my eyes, and the prothorax as well as the elytra are narrower and a little longer. These differences may be sexual characters.

2. *Cerobates adustus* Senna, Notes from the Leyden Museum, vol. XVI, p. 184, 1894.

Eastern Java (Tengger Mts., 4000'); Western Java (Pengalengan, 4000').

Two specimens. The sutural region is darker than the general color of the body.

3. *Cerobates angustipennis* Senna, l. c. p. 182, 1894.

Four specimens from the above named localities. These specimens, being of a chestnut color with the sutural region darker, strongly resemble *C. adustus* Senna, but they are easily distinguishable by the external stria touching the apex of the elytra and by these latter being conspicuously attenuated towards the tip. The legs are ferruginous or ferruginous brown.

4. *Cerobates tristriatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 66, 1802.

Two specimens in the Brussels Museum. They are simply labelled: Java, Fruhstorfer.

5. *Miolispa exarata* Desbroch., Journ. Asiat. Soc. Bengal, vol. 59, II, p. 223, 1890.

Western Java (Sukabumi, 2000'; Pengalengan, 4000'; Mt. Gede, 4000'); Eastern Java (Tengger Mts., 4000').

Several males and females.

Mr. Fruhstorfer wrote to me that this species has been captured on flowers.

This notice is important being the first ascertained example of this habit in Brentheids which was already indicated by Olivier<sup>1)</sup>; the usual quarters of these insects

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1) Olivier (Entomologie ou Histoire naturelle des Insectes, V, 84, p. 429) says: "ces insectes dont les habitudes sont de fréquenter les fleurs pour se nourrir du suc mielleux qu'elles distillent."

are nevertheless under the dry bark of trees or in the holes made into trees by different small wood-borers, and also in the detritus of fallen trees.

6. *Trachelizus bisulcatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 6, 1802.

Western Java (Mt. Tjikorai, 4000').

Two males and a female.

7. *Prophthalmus longirostris* Gylh. Schoenherr, Gen. et Spec. Curcul. 1, p. 323, 1833.

Western Java (Pengalengan, 4000').

A male.

8. *Prophthalmus pugnator* Pow. Ann. Soc. Entom. France, 5<sup>e</sup> sér., VII, Bull. p. 44, 1878.

Western Java (Sukabumi, 2000'; Mt. Tjikorai, 4000'; Pengalengan, 4000'); Eastern Java (Tengger Mts. 4000').

Several specimens.

9. *Baryrrhynchus latirostris* Gylh. Schoenherr, Gen. et Spec. Curcul. 1, p. 323, 1833.

Western Java (Mt. Tjikorai, 4000'; Pengalengan, 4000'; Sukabumi, 2000').

Several specimens.

10. *Pseudorychodes Fruhstorferi*, n. sp.

♂. Moderately elongate, robust, glabrous, chestnut-red, more or less saturate, shining; prothorax chestnut, slightly bronzy, very shining, elytra with yellow or ferruginous lines.

Head short, transverse, almost truncate at the base and distinctly impressed at both sides of the median line; the hinder angles are slightly prominent but not toothed; the vertex and the front are broadly furrowed, with the margins of the furrow raised. The basal portion of the rostrum is rather stout, scarcely longer than the head, provided with three furrows, of which the median one is broader and deeper and has the margins keeled, the sides behind the scrobes are roughly impressed; the portion between the antennae is moderately enlarged, callous above, with the margins incrassate; the apical portion is longer and narrower than the basal one, finely scabrous,

almost parallel at the sides and hardly enlarged at the tip, slightly furrowed above in the basal half, the margins feebly elevated and obsoletely scabrous, not toothed. Beneath the rostrum is keeled along the middle, except in the apical third; the head and the base of the rostrum have a row of punctures at the sides of the keel. Antennae longer than the head and prothorax together, the 3<sup>rd</sup> joint is obconic, the 4<sup>th</sup>—8<sup>th</sup> are rectangular, almost square, the 9<sup>th</sup> and 10<sup>th</sup> longer, cylindrical; the apical joint is elongate, as long as the two preceding ones, and obtusely pointed at the tip.

Prothorax ovate, as long as the head and rostrum taken together, narrower at the apex, where it is transversely furrowed, than at the base; at the base it is terminated by a large collar which is likewise transversely furrowed; convex above, glabrous, very shining, obsoletely channelled near the base.

Elytra shorter than twice the prothorax and hardly broader than this; the base is emarginate, with the humeral angles rounded and slightly callous, the sides are straight, curved at the apical declivity; the apex is emarginate, the external angles are obtusely rounded; punctured and furrowed above, the 1<sup>st</sup> furrow near the suture is narrower than the others and impunctate, the sutural interstice is rather broad and depressed, the others are narrower, raised, convex, scarcely curved at the base; each elytron has 11 colored lines, arranged in the following manner: the 2<sup>nd</sup> interstice has three lines (one at the base, another behind the middle and the 3<sup>rd</sup> near the apex, the basal line is the longest), the 3<sup>rd</sup> interstice has a line before the middle and another shorter one behind it, the 4<sup>th</sup> bears a basal spot and a short line behind the middle; on the 5<sup>th</sup> interstice there is a short line as the preceding, on the 7<sup>th</sup> a line occupying the basal third, but not touching the base, and, finally, the 8<sup>th</sup> interstice has a short line near the preceding and another at the apical declivity.

Legs rather robust, ferruginous-brown; thighs clubshaped and spined, anterior tibiae enlarged at the apical third, the last joint of the tarsi is elongate and strongly compressed. Body beneath more reddish, anterior coxae conspicuously separated; metasternum irregularly furrowed, the two basal segments of the abdomen are broadly impressed, the three following segments have the lateral borders fringed with a yellow pubescence, the apical segment is also foveate.

In the female the basal portion of the rostrum is slightly shorter than in the male, the median furrow only is conspicuous, the apical portion is cylindrical and slender; the joints of the antennae are shorter, the prothorax is narrower anteriorly, less enlarged behind the middle, the channel of the base is wanting; the elytra are nearly truncate at the tip, the basal segments of the abdomen are convex, the apical one hardly depressed.

Length  $13\frac{1}{2}$ — $16\frac{1}{2}$  mill.; width of the proth.  $2\frac{1}{3}$ —3 mill.

Western Java (Mt. Tjikorai, 4000').

A male and a female in the Leyden Museum.

I have a female, likewise from Java, in my own collection.

The head broadly furrowed above, the basal portion of the rostrum with three furrows, the 4<sup>th</sup>—8<sup>th</sup> joints of the antennae which are nearly square, the broad prothorax and the last joint of the tarsi which is strongly compressed, are the characters by which *Ps. Fruhstorferi* m. is easily distinguishable from all other species of this genus.

11. *Hormocerus reticulatus* Lund, Skrivt. af naturhist. selskab. V, 2, p. 81, 1802.

Eastern Java (Tengger Mts., 4000').

A male and three females.

12. *Schizotrachelus brevicaudatus* Lacord. Gen. Coléopt. VII, p. 455, note 2, 1866.

Western Java (Mt. Tjikorai, 4000'; Pengalengan, 4000'). Several specimens.

The color is dark chestnut, with the rostrum, antennae, legs and elytral appendages more reddish.

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13. *Schizotrachelus intermedius* Senna, Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, vol. XII, p. 481, 1892.

Western Java (Pengalengan, 4000'); Eastern Java (Tengger Mts., 4000').

I refer to this species two males which resemble in color the preceding, *S. brevicaudatus* Lac. The typical specimens from Burma and Karennee are ferruginous brown. The prothorax in the javanese specimens is impunctate at the sides, and the elytra are obsoletely striato-punctate.

*S. intermedius* Senna is chiefly distinguishable from *S. brevicaudatus* Lac. and *S. madens* Lac. by the rostrum being not furrowed at the base, and from *S. consobrinus* Lac. by the elytra being differently shaped at the apex.

14. *Cediocera tristis* Senna, Notes from the Leyden Museum, vol. XIV, p. 181, 1892.

Western Java (Pengalengan, 4000').

A female.

15. *Diurus furcillatus* Gylh. Schoenherr, Gen. et Spec. Curcul. 1, p. 359, 1833.

Many specimens in the Brussels Museum; they are labelled: Java, Fruhstorfer.

Florence, May 20<sup>th</sup>, 1895.



## NOTE XII.

## DESCRIPTION OF TWO NEW BRENTHIDAE

BY

**Dr. ANGELO SENNA,**

Assistant in the R. Museum, Florence.

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*Eupsalis somalica*, n. sp.

♂. Parum elongata, robusta, nigra, finissime pilosa, pilis flavicantibus, prothorace nitido, capite, rostro elytrisque minus nitidis, his apice rufescente et dorso rufo-ferrugineo maculatis. Capite vix latiore quam longiore, supra sat distincte impresso, impressione basin haud attingente, utrinque circa oculos sparsim piloso; rostro lato, robusto, medio impresso, utrinque carinulato, appendicibus basalibus laminatis, sat conspicuis; inter antennas transversim bituberculato, parte apicali dilatata, fusca, supra utrinque carinulata, carinis recurvis, antice paulo emarginata; mandibulis magnis, falcatis, postice supra leviter strigosis, antice intus obsolete denticulatis; antennis piceo-brunneis, articulo 1° inflato, 2° basi constricto, vix brevior quam 3°, hoc basi angustior quam antice, 4°—9° subaequalibus, longioribus quam latioribus, 10° vix brevior, apicali duobus praecedentibus conjunctis aequali. Prothorace ovato, antice attenuato, postice ampliato, basi rapide constricto, transversim sulcato, margine postico fortiter punctato-crenato, disco obsoletissime rareque punctulato, polito, lateribus et basin versus finissime piloso. Elytris longitudine prothoracis cum capite et rostro (mandibulis exclusis) subae-

qualibus et circiter prothoracis latitudine, sparsim pilosis praecipue lateribus, basi emarginatis, humeris rotundatis leviterque callosis, lateribus in quarto basali subparallelis, deinde gradatim attenuatis, apice subtruncatis, breviter explanato-marginatis, angulo externo rotundato; juxta suturam unistriatis, stria valde angusta, obsolete remote punctulata, externe basin versus substriato-fortiter punctatis, punctis profundis, irregularibus, interstitiis convexis, postea lineatim-punctulatis, punctis rapide decrescentibus; singulo elytro macula subquadrata ad basin, vittula transversa, irregulari in tertio basali, altera brevior transversa pone medium rufo-ferrugineis ornato. Femoribus nigris, clavatis, sparsim pilosis, anticis magis spinosis quam medianis et posticis, tibiis et tarsis rubro-brunneis; corpore infra nigro, sat nitido, undique minute rareque punctulato, punctis pilosgerentibus, margine antico prosterni subciliato, metasterno apicem versus et abdominis basi in medio impressis; coxis punctatis et pilosis. — Long. (mandibulis exclusis)  $12\frac{1}{2}$  mill.

*Hab.* Somali-land. — A single male specimen presented to the Leyden Museum by Mr. van Lansberge.

Resembling *E. vulsellata* Gylh.<sup>1)</sup> by the coloration, but the body is more robust, the head more strongly impressed above and hairy at the sides, the basal apophyses of the rostrum are more conspicuous, the prothorax is wider, feebly punctured and hairy, with the basal margin punctato-crenate, the coxae are punctured, etc.

It agrees with *E. forcicata* Thoms.<sup>2)</sup> by the anterior coxae, being punctured and hairy, but it differs from it by the color, by the body being more robust and hairy, and by the prothorax being slightly punctured, with the basal margin differently shaped; the sculpture of the elytra is also different.

If I compare *E. somalica* Senna with *E. bifalcata*

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1) Schoenherr, Gen. et Spec. Cureul. I, p. 325, 1833.

2) Archives Entomol. II, p. 118, 1858.

Fairm.<sup>1)</sup>, an ethiopian species which has the basal margin of the prothorax likewise punctato-crenate, the differences, according to Fairmaire's description, are the following: head impressed in the middle and hairy at the sides, prothorax punctured and hairy, elytra as long as the prothorax, head and rostrum (without mandibles) taken together, unistriate along the sutural interstice, coxae punctured and hairy, general color different.

Finally *E. Reichei* Fairm.<sup>2)</sup>, a palaearctic and oriental species, inhabiting Creta, Palaestina, India, Hongkong, etc., agrees with *E. somalica* Senna by the prothorax being slightly punctured (in well preserved specimens the punctures are also hair-bearing) and by the basal margin of the prothorax which is punctato-crenate, two characters not mentioned in Fairmaire's description; but the color of *E. Reichei* Fairm. is different, the head less impressed above, not hairy, with the basal angles indistinct, and the antennal portion of the rostrum differently shaped, the prothorax is less narrow anteriorly, its basal margin is entirely punctato-crenate and not only posteriorly as in *E. somalica* Senna, the sculpture of the elytra is also different and the coxae are glabrous.

*Apterorrhinus*, n. g.

( $\alpha$  = privat.,  $\pi\tau\epsilon\rho\delta\nu$  = ala,  $\acute{\nu}\nu$  = nasus).

*Hormocero* Schh. et *Rhinopteryce* Lac. genus intermedium. Ab illo differt corpore brevior et latior, capitis angulis posticis magis conspicuis, rostri parte basali valde abbreviata, crassa, capite paullo longiore, ante antennarum insertionem rapide fortiterque coarctata, regione interantennali magis rotundata et dilatata, parte antica robustiore, similiter conformata sed conspiciue brevior; antennis brevioribus et

1) Bull. Soc. Ent. Belgique, XXVIII, p. 147, 1884. — Ann. Soc. Ent. France, VI sér., VII, p. 325, 1887.

2) Ann. Soc. Ent. France, III sér., VII, Bull. p. 164, 1859.

crassioribus, scapo brevior, articulis medianis lineato-transversis; prothorace sub-ovato, antice utrinque strangulato, lateribus profunde scrobiculatis; elytris brevioribus et latioribus, apici minus marginatis, dorso sulcato-scrobiculatis, scrobiculis subrotundatis, interstitiis longitudinalibus magis undulatis, femoribus et tibiis brevioribus et latioribus, tarsis itidem brevioribus, crassioribus, articulo unguifero fortiter compresso; coxis anticis magis separatis.

A genere *Rhinopteryx* Lac. distinguitur capite vix brevior, oculis et angulis posticis magis prominentibus, rostri parte basali haud conica, parte antica haud marginato-dilatata, illa lateribus subparallelis et ante antennae rapide fortiterque coarctata, hac simplici, angustiore quam postica, cylindrica, apicem versus depressiuscula et vix dilatata; antennis crassioribus, articulis funiculi, ut dixi, lineato-transversis, 9<sup>o</sup> et 10<sup>o</sup> latioribus sed brevioribus; prothorace latiore, utrinque magis scrobiculato; elytris basi triberculatis, sulcis latioribus, interstitiis longitudinalibus angustioribus, magis elevatis ac undulatis, interstitiis transversis magis depressis; femoribus tertio apicali dentatis, tarsorum articulo unguifero lateribus compresso; coxis anticis magis separatis.

*Apterorhinus* m. must be placed between *Hormocerus* Schh. and *Rhinopteryx* Lac. being a transitional genus. It may be characterized as follows:

Body moderately elongate, robust, scaled. Head transverse, notched at the base with the external angles prominent, like tubercles, furrowed above; basal portion of the rostrum short, hardly longer than the head, stout, parallel at the sides, strongly contracted before the antennal portion; apical part longer than the preceding one, narrower, curved, cylindrical, moderately enlarged at the tip. Antennae short and robust, with the median joints strongly transverse, the 9<sup>th</sup> and 10<sup>th</sup> longer, the apical one ovato-conical. Prothorax ovate, strangulate at the sides anteriorly, depressed above, deeply furrowed in the middle, scrobiculate laterally. Elytra almost parallel at the sides,

briefly margined and rounded at the apex, hardly emarginate near the suture; deeply sulcato-scribulate, the furrows are broad, the impressions rounded or transverse, not scaled, the longitudinal interstices are raised, narrow, finely waved, scaled, three of them are prominent, like tubercles, at the base. Anterior coxae separated. Legs short and robust, thighs briefly toothed, tibiae broad, compressed, the anterior ones angularly enlarged near the middle, tarsi short, broad, with the last joint conspicuously compressed. Prosternum and mesosternum roughly punctured above, metasternum at the sides, the latter furrowed in the middle; the base of the abdomen is broadly sub-excavated.

*Apterorrhinus compressitarsus*, n. sp.

♂. Fuscus, opacus, fufure lurido-cinereo et ochraceo-fuligineo tectus; rostri parte antica (apice excepto), collo, pedibus, elytrorumque sulcis plus minusve rubro-brunneis; rostri apice et sutura nigris. Capite supra et infra pruinoso, in medio fortiter-, lateribus supra oculos leviter sulcato, angulis posticis prominentibus, tuberculiformibus, oculis mediocribus, subglobosis; rostro basi similiter vestito, medio sulcato, regione inter antennas rotundato-ampliata, parte antica in dimidio apicali nuda, nitida, antice emarginata; antennis brevioribus quam rostro et capite unitis, robustis, vix citra medium rostri insertis, articulis funiculi pruinosis, breviter rareque pilosis, apicalibus majoribus, 10° et 11° squamositate carentibus. Prothorace capitis cum rostro circiter longitudine, antice subtruncato, apicem versus utrinque strangulato, deinde recurvato-ampliato basi sulco transverso angusto exarato margineque crasso munito; supra depresso, regulariter profundeque sulcato, lateribus scribiculato sublutoso, sulco et scribiculis griseo-pruinosis, disco squamulis punctiformibus scabriusculo. Elytris dimidio circiter prothoracis longioribus, illius latitudini basin versus aequalibus, postice leviter attenuatis, basi emarginatis, singulo elytro 3-tuberculato; dorso subdepressis,

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sulcato-scribiculatis, sulcis latis, sulco 1<sup>o</sup> minus punctato, scribiculis subrotundatis vel transversis, sulcis et punctis haud squamosis, interstitio suturali depresso, nigro (in specimine descripto), nudo usque ad declivitatem apicalem, caeteris angustioribus, elevatis, minute undulatis, furfure vestitis; interstitio declivo-suturali praesente, brevi et angusto. Pedibus et tarsis breviter sparsimque pilosis, furfure sparsis, articulo unguifero conspicue compresso. Corpore infra subnudo, brunneo-rubro; prosterno, mesosterno, metasterni abdominisque lateribus rude punctatis, metasterni disco sparsim punctato, punctis pilosis, medio sulcato; abdominis basi late subexcavata, punctata et pilosa; segmento apicali foveolato, flavo-pubescente.

♀. Differt: capite brevior, angulis pone oculos minimis, rostri basi itidem brevior, regione intra-antennali paulo angustior, parte antica longior, gracilior, cylindrica, nuda, apice haud ampliato; antennis proprius basin rostri insertis, articulis brevioribus; sulco prothoracis magis regulare, abdomine basi minus depresso, haud excavato, segmento apicali brevior. In specimine viso etiam notanda sunt: scribicula prothoracis haud pruinosa, illa elytrorum magis rotundata, elytrorum sulci colore fusco, interstitium suturale haud nudum, caetera magis undulata, indumentum magis infuscatum.

Long. 13½ mill., lat. max. proth. 3 mill.

*Hab.* South Luzon (Philippine Isl.), a male collected by Mr. Whitehead, in the Rothschild Museum at Tring; a female from Sipirok (Western Sumatra) taken by Mr. A. L. van Hasselt and presented by him to the Leyden Museum.

Florence, June 22<sup>nd</sup>, 1895.

## NOTE XIII.

DESCRIPTION OF A NEW SPECIES OF THE  
LUCANOID GENUS METOPODONTUS

BY

J. R. H. NEERVOORT VAN DE POLL.

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*Metopodontus Kannegieteri* v. d. Poll.

Closely allied to *M. suturalis* Oliv., having exactly the same coloration and dentition of mandibles (at least in the development now before us), but comparing individuals of equal size, our new species is in all its proportions a much more slender and elegant insect, whilst the following structural differences of the head and thorax show at a glance its specific distinctness:

*suturalis.*

Head flat, with a very shallow frontal depression; ocular canthus cut off in a straight line.

*Kannegieteri.*

Head considerably swollen, with a deep semi-circular depression in front, the vertex with two small nodosities (which probably in larger developed individuals will assume a more spini- or dentiform shape) in the middle at the margin of the declivity; ocular canthus rather deeply emarginate.

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<p>Sides of the thorax rounded, with a rather indistinct notch behind the middle; posterior angles hardly marked, being so broadly rounded as to make the lateral margin pass insensibly into the basal one.</p>	<p>Sides of the thorax with a strong angular tooth behind the middle; posterior angles obtuse but well marked.</p>
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The sculpture of both species is also the same, except that the head of *Kannegieteri* is still more delicately punctured.

A single specimen of median development has been captured, in April 1890, by Mr. J. Z. Kannegieter in the mountains near lake Ranau in the interior of the Palembang Residency (Sumatra) at an elevation of  $\pm 3000'$ .

NB. In the same locality Mr. Kannegieter has had the good luck to secure a male specimen of the exceedingly rare *M. zebra* Oliv., a species of which the habitat was unknown to Olivier<sup>1)</sup> and has remained unknown for almost a century, no specimens having apparently reached Europe besides the unlocalized female described by Major Parry. More recently I also got a female specimen, obtained by Mr. Fruhstorfer when bringing together entomological collections in the Tengger mountains (East Java).

Beukenstein-Museum, July 1895.

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1) Snellen van Vollenhoven has already mentioned that Olivier's type-specimen from the ancient Dutch collection of Mr. Raye van Breukelerwaerdt is now preserved in the Leyden Museum, and although Olivier did not mention its habitat it occurred to be labelled „Pays des Birmans” when it came in the Museum collection. Although the possibility of its being also an inhabitant of Burmah is not excluded, I consider it much more probable that this specimen found his way to Holland from the Dutch colonies.



## NOTE XIV.

A REVISION OF THE GENUS TURDINUS AND  
GENERA ALLIED TO IT,WITH AN ENUMERATION OF THE SPECIMENS  
CONTAINED IN THE LEYDEN MUSEUM

BY

**J. BÜTTIKOFER.**

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When looking over the material in the Leyden Museum of what is at present generally understood as the genus *Turdinus* and closely allied genera, I found it in many instances extremely difficult, even with the aid of the key to the genera in Sharpe's Catalogue of Birds, vol. VII, to find out the genus in which a great number of species usually are placed. This inconvenience is greatly due to the want of well-marked characters in a number of closely related genera, while, on the other hand, genera have been united which, on account of a sufficient number of striking differences, would better be kept separate.

There is, for instance, no necessity whatever for uniting the genus *Malacocincla* with the very different, thrush-like genus *Turdinus*, while, on the other hand, genera as *Erythrocichla*, *Drymocataphus*, *Trichostoma* and *Malacopteron* are much more closely allied amongst each other and to *Malacocincla* than this latter is to *Turdinus* <sup>1)</sup>.

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1) Genera, as a rule, are based upon structural characters, though the separation of the genus *Merula* from *Turdus* sufficiently shows that there is already made use of the modus of coloration in some cases of generic classification.

One of the consequences of my attempt to obtain a more satisfactory classification is the re-separation of the genus *Malacocincla* from *Turdinus* proper, while on the other hand, I was obliged to remove certain misplaced species and to place them into other more convenient genera.

In the following arrangement are included the species, collected during my recent sojourn in Central Borneo. A report of the zoological results of the last Dutch scientific expedition to Borneo, of which I had the pleasure to be appointed as zoologist, will be published later on in this periodical.

The chief principle upon which I have based my arrangement is the proportion between the length of tarsus and tail, the first forming a very important moment in the locomotion of these birds, which are passing most of their life-time on the ground, while the last shows much more difference in size than the wing. The wing-formula is the same in the whole group of Timeliine birds and cannot be made use of in the present classification, while the shape of the bill and the position of the nasal aperture must be considered as characters of second rank. It is sometimes far from easy to say whether the nasal aperture is round and placed in front of the nasal groove, or linear and placed at the bottom of the latter. All this depends much upon the better or less good condition of these parts in the skin, and but too often they are badly mutilated if not entirely destroyed.

#### Key to the genera.

- A. Plumage thrush-like, more or less mottled with black, fulvous or white; feathers on head, hind neck and mantle large and rounded (not fluffy), giving these parts a scaly appearance.
  - a. Size large, thrush-like, tail double the length of the tarsus or longer.
    - a'. Feathers on rump fluffy, unstriped . . . *Turdinus*.

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- b'*. Feathers on rump more or less lanceolate and centrally streaked with white . . . . . *Ptilocichla*.
- b*. Size smaller, tail shorter, less than double the length of the tarsus, outstretched feet exceeding the tip of the tail.
  - a'*. No pale shaft-streaks on the upper surface. . *Ptilopyga*.
  - b'*. Upper surface with more or less conspicuous fulvous shaft-streaks.
    - a''*. Feathers on upper surface on both sides edged with black.
      - a*<sup>3</sup>. Larger, bill shorter and stouter than is the rule in this group, no light spots on the tips of wing-coverts and secondaries. *Lanioturdinus*.
      - b*<sup>3</sup>. Smaller, bill normal, slender, light spots on wing-coverts and secondaries. . . . *Turdinulus*.
      - b''*. Inner web of the mantle-feathers black, bill as long as the tarsus, slender and curved. *Rimator*.
- B*. Color of plumage on upper surface plain, never mottled with black or fulvous.
  - a*. Tail short, never much more, in some cases even less, than once and a half the length of the tarsus.
    - a'*. Bill stout, nasal opening rounded and placed in front of the membrane . . . . . *Malacocincla*.
    - b'*. Bill slender, nasal opening linear and placed at the lower edge of the membrane.
      - a''*. Rictal bristles present.
        - a*<sup>3</sup>. Larger, tarsus more than 2,5 cm., bill more timeliine . . . . . *Anuropsis*.
        - b*<sup>3</sup>. Smaller, tarsus less than 2,5 cm., bill more muscipine . . . . . *Crateroscelis*.
        - b''*. Rictal bristles absent . . . . . *Amaurocichla*.
  - b*. Tail about twice as long as the tarsus, or somewhat more.
    - a'*. No distinct superciliary streak, rictal bristles well-developed, reaching beyond the nostrils. *Trichostoma*.
    - b'*. A distinct white or ashy white eyebrow, rictal bristles wanting or short, not reaching the nostrils . . . . . *Drymocataphus* <sup>1)</sup>.

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1) Directly behind this genus must probably be placed *Drymochaera* Finsch (see after, p. 94), on account of its grayish white eyebrow and its tail being twice as long as the tarsus; in fact I am unable to find in the description any character striking enough to separate it from *Drymocataphus*, except, perhaps, the pale-colored head and the white under wing-coverts, which both characters are unusual in this genus.

- c. Tail more than twice, but less than three times the length of the tarsus.
- a'. Tarsus and toes very long, the first generally exceeding an inch in length.
- a". A distinct pale eyebrow, rictal bristles faintly developed or wanting.
- a<sup>3</sup>. Crown much darker than rest of upper surface, sides of head and lower surface rusty fulvous. . . . . *Scotocichla*.
- b<sup>3</sup>. Crown like upper surface in color.
- a<sup>4</sup>. Eyebrow ferrugineous, like sides of head and lower surface . . . . . *Ortygocichla*.
- b<sup>4</sup>. Eyebrow mouse-gray, throat pale fulvous. *Elaphrornis*.
- c<sup>3</sup>. Crown more or less rufous, distinct from rest of upper surface.
- a<sup>4</sup>. Lower surface not streaked, throat and chest pale ochre, tail longer than wing. *Mülleria*.
- b<sup>4</sup>. Lower surface, or at least the chest, with dark shaft-streaks . . . . . *Pellorneum*.
- b". Eyebrow wanting, rictal bristles fairly developed . . . . . *Erythrochichla*.
- b'. Tarsus shorter, generally not more than an inch in length <sup>1)</sup>, toes rather weak.
- a". Eyebrow wanting, rictal bristles hardly reaching beyond the nostrils . . . . . *Illadopsis*.
- b". A distinct white eyebrow, rictal bristles very strongly developed, reaching far beyond the nostrils . . . . . *Ophrydornis*.
- d. Tail about three times the length of the tarsus. *Malacopteron*.

### GENUS *Turdinus*.

Type: *Turdinus macrodactylus* Blyth, Journ. As. Soc. Beng. XIII, p. 382 (1844).

There is hardly anything to be added to the ample diagnosis of this genus, as given by Blyth in the above mentioned Journal, except that not only the form, but also size and color, are remarkably turdine. By these latter characters it is sufficiently distinguished from all other birds of this group. — Five species known.

Range. Malay Peninsula and the great Sunda Islands.

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1) The sole exception from this rule is made by *Illadopsis rufescens* Reichw., its tarsus measuring 1,15 inch.

## Key to the species.

- a.* Chest and breast with broad white or pale fulvous shaft-streaks.
  - a'*. Bill shorter, culmen utterly 2, 1 cm. . . . . *macrodactylus*.
  - b'*. Bill longer, culmen at least 2, 4 cm.
    - a''*. Breast rufous . . . . . *rufipectus*.
    - b''*. Breast gray in the centre, laterally dark fulvous . . . . . *lepidopleurus*.
- b.* No shaft-streaks on chest and breast.
  - a'*. Throat black, chest and breast white or pale fulvous, each feather bordered with black . . . *atrigrularis*.
  - b'*. Throat white, lower surface black, each feather bordered with white. . . . . *loricatus*.

1. *Turdinus macrodactylus*.

*Malacopteron macrodactylum* Strickl. Ann. & Mag. Nat. Hist. XIII, p. 417 (1844).

*Turdinus macrodactylus* Blyth, Journ. As. Soc. Beng. XIII, p. 382 (1814); Sharpe, Cat. B. VII, p. 548 (1883).

H a b. Malacca.

Three specimens, two labelled »Malacca'', the third from Wellesley (Dr. Hagen).

2. *Turdinus rufipectus*.

*Turdinus rufipectus* Salvad. Ann. Mus. Civ. Genov. XIV, p. 224 (1879); Sharpe, Cat. B. VII, p. 549 (1883).

H a b. Sumatra.

3. *Turdinus lepidopleurus*.

*Myiothera lepidopleura* Temm. MS. Mus. Lugd.

*Cacopitta lepidopleura* Bp. (ex Temm. MS.) Consp. I, p. 257 (1850).

*Turdinus lepidopleurus* Sharpe, Cat. B. VII, p. 539 (note); id. N. L. M. 1884, p. 170 <sup>1)</sup>.

H a b. Java.

Five specimens, amongst which the two types (♂ & ♀).

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1) Dr. Sharpe (l.c.) yields to the opinion that *T. lepidopleurus* ought to be united to *T. macrodactylus*. I believe, however, the distinctive characters mentioned in the key sufficient to keep the two species separate.

4. *Turdinus atrigularis*.

*Myiothera atrigularis* Temm. MS. in Mus. Lugd.

*Cacopitta atrigularis* Bp. (ex Temm. MS.) Consp. I, p. 257 (1850).

*Turdinus nigrogularis* <sup>1)</sup> Blyth, Ibis 1865, p. 47.

*Turdinus atrigularis* Blyth, Ibis 1870, p. 170; Salvad. Ucc. Born. p. 217 (1874); Sharpe, Cat. B. VII, p. 549 (1883); id. Ibis 1889, p. 414; Everett, Journ. Straits Branch R. As. Soc. 1889, p. 109; Ch. Hose, Ibis 1893, p. 387; Sharpe, Ibis 1893, p. 547, 550; id. 1894, p. 540, 542.

Hab. Borneo.

The two typical specimens from Banjermassin (Schwaner) and six collected by myself in Central Borneo.

5. *Turdinus loricatus*.

*Myiothera loricata* Müll. Tijdschr. Nat. Gesch. Amst. 1835, p. 348.

*Cacopitta loricata* Bp. Consp. I, p. 257 (1850).

*Turdinus marmoratus* Wardlaw Ramsay, P. Z. S. 1880, p. 15.

*Turdinus loricatus* Sharpe, Cat. B. VII, p. 550 (1883); Bütt. N. L. M. 1887, p. 66.

Hab. Sumatra.

The three typical specimens in the Leyden Museum.

GENUS *Ptilocichla*.

Type: *Ptilocichla falcata* Sharpe, Trans. Linn. Soc., Zool. 2nd ser. I, p. 332 (1876).

This genus differs from the preceding as well as from the following by the striped plumes on lower back and rump. On the other hand it stands near *Turdinus* on account of its rather large size and the long tail, which is nearly twice as long as the tarsus, while it agrees with *Ptilopyga* in the blackish, white-striped under surface. — Three species known.

Range. Philippine Archipelago.

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1) Evidently a slip of the pen, as Blyth must have meant *Myiothera atrigularis*, no *M. nigrogularis* Temm. being found in the Leyden Museum.

## Key to the species.

- a.* Back black or blackish brown, with broad, fulvous shaft-streaks . . . . . *falcata*.
- b.* Back olive-brown, the feathers with narrow, fulvous shaft-streaks. . . . . *basilanica*.
- c.* Back fulvous, shaft-stripes indistinct . . . . . *mindanensis*.

1. *Ptilocichla falcata*.

*Ptilocichla falcata* Sharpe, Trans. Linn. Soc., Zool. 2nd ser. I, p. 332 (1876); id. Cat. B. VII, p. 586 (1883); W. Blas. Ornith. 1888, p. 314.

Hab. Island of Palawan, Philippine Archipelago.

Two specimens, collected by Dr. Platen at Puerto Princesa.

2. *Ptilocichla basilanica*.

*Ptilocichla basilanica* Steere, List of Birds and Mammals, coll. by the Steere Exped. to the Philippines; Ann Arbor, Mich. p. 18 (1890); id. Ibis 1891, p. 312, pl. VII.

Hab. Island of Basilan, Philippine Archipelago.

3. *Ptilocichla mindanensis*.

*Ptilocichla mindanensis* Steere, op. cit. p. 18 (1890); id. Ibis 1891, p. 312.

*Ptilopyga mindanensis* Blas. J. f. O. 1891, p. 146.

Hab. Island of Mindanao, Philippine Archipelago.

GENUS *Ptilopyga*.

Type: *Ptilopyga leucogrammica* Sharpe, Cat. B. VII, p. 586 (1883).

This genus was originally founded by Sharpe upon *Malacocincla rufiventris* Salvad. Ucc. Born. p. 229, but as Salvadori already suggested, *M. rufiventris* is a real *Malacocincla* and closely allied to *M. sepiaria*. Together with *M. rufiventris*, Sharpe placed in this genus as a second species *Cacopitta leucogrammica* Bp., but as he never published a

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diagnosis of his genus *Ptilopyga*, I do not see any reason why not to maintain it for the resting second species, which is generically distinct from *Cacopitta* (*Turdinus*) as well as from *Malacocincla*.

The genus, in its present restricted sense, may be characterized as follows: Closely allied to the genera *Turdinus* and *Ptilocichla*, but much smaller and short-tailed, the tail being but little longer than the tarsus; bill slender as in the two preceding genera, not higher than broad at the nostrils, nasal aperture placed in front of the nostril. Upper surface unstriped, under surface blackish with very large white centres to the feathers. — One species known.

Range. Borneo.

### 1. *Ptilopyga leucogrammica*.

*Myiothera leucogrammica* Temm. MS. in Mus. Lugd.

*Cacopitta leucogrammica* Bp. Consp. I, p. 257 (1850).

*Turdinus leucogrammicus* Salvad. Ucc. Born. p. 217 (1874); Sharpe, Ibis 1877, p. 11.

*Ptilopyga leucogrammica* Sharpe, Cat. B. VII, p. 586 (1883); Everett, Journ. Straits Branch R. As. Soc. 1889, p. 110; Hose, Ibis 1893, p. 388; Sharpe, Ibis 1893, p. 548; id. Ibis 1894, p. 543.

Hab. Borneo: Pontianak (Diard); Sarawak (Beccari, Everett, Ch. Hose).

The typical specimen from Pontianak (Diard) in the Leyden Museum.

### GENUS *Lanioturdinus*, n. g.

Type: *Corythocichla crassa* Sharpe, Ibis 1888, p. 391.

Plumage of the *Turdinus*-group, as characterized *antea* in the key to the genera under lett. A; tail once and a half the length of the tarsus, tarsi and toes long, reaching beyond the tip of tail when outstretched, bill very robust, compressed, higher than broad at nostrils and respectively short, remembering that of *Malacocincla rufiventris* rather than the slender bill of the *Turdinus*-group, nasal aperture

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rather linear and placed near the front at the bottom of the membrane. Considerably larger than *Turdinulus* and and *Corythocichla*, wanting their clear triangular spots on wing-coverts and secondaries; feathers on lower back and upper tail-coverts with indications of fulvous shaft-streaks, which character remembers the genus *Ptilocichla*. — One species.

Range. Borneo.

1. *Lanioturdinus crassus*.

*Corythocichla crassa* Sharpe, Ibis 1888, p. 391; id. id. 1889, p. 418; Everett, Journ. Straits Branch R. As. Soc. 1889, p. 110.

Hab. Borneo. Hitherto only found on Mount Kina Balu at an elevation of 7000—10000 feet.

Two males, obtained from Mr. Whitehead, in the Leyden Museum.

GENUS *Turdinulus*.

Type.

*Turdinulus* Hume, Str. F. VI, p. 235 (1878). . . *T. Roberti*.

*Corythocichla* Sharpe, Cat. B. VII, p. 592 (1883) . *C. brevicaudata*.

Although I have not seen any specimen of *Turdinulus Roberti* nor of *Corythocichla brevicaudata*, I feel quite sure that the genus *Corythocichla* ought to be suppressed and its species brought under the genus *Turdinulus*. When creating the genus *Corythocichla*, Sharpe failed to give a description of it, but from the key to the genera of the *Timeliæ*, p. 507 of the above mentioned Catalogue, we learn that in *Corythocichla*, which, together with *Turdinulus*, is placed in the short-tailed group, the tail is longer, surpassing the long plumes of the rump, while the tail of *Turdinulus* is said to be »so short as to be hidden by the plumes of the rump”<sup>1)</sup>.

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1) This character is mentioned by Godw. Austen & Walden in the original description of *Pnoepyga Roberti* in Ibis 1875, p. 252, and thence adopted by Sharpe in his above cited key to the genera.

Being unable to find any other mention made in literature about this last cited peculiarity, and even Sharpe not speaking of it in the short description of *T. exsul* (Ibis 1888), and not having all the species at my disposal, I am obliged to take into consideration the length of the tail in the different species only, instead of its proportion to the upper tail-coverts, giving at the same time the measurements in inches of culmen, tarsus and wing.

	Culmen	Tarsus	Wing	Tail.
<i>T. Roberti</i> . . . . .	0,65	0,8	2,05	1.
<i>T. exsul</i> . . . . .	0,65	0,85	2,2	1,15
<i>C. epilepidota</i>				
<i>a.</i> from Sumatra .	0,6	0,9	2,05	1,25
<i>b.</i> from Java . . .	0,7	0,95	2,05	1,4
<i>C. striata</i> . . . . .	0,6	1.	2,4	1,4
<i>C. leucosticta</i> . . . .	0,7	0,95	2,5	1,8
<i>C. brevicaudata</i> . . .	0,6	0,9	2,4	1,5

From this table we may freely conclude that we are not entitled by any of the measurements to divide the mentioned species into two different genera. Knowing no other character upon which to base a separation, I propose to unite both genera under the name *Turdinulus*, which genus may be characterized as follows:

Small, bill slender, compressed on its anterior half, nostrils covered by a membrane, nasal aperture split-shaped and placed along the bottom near the front of the membrane, tarsi and toes long, the first more than half the length of the tail, which is very short, giving, together with the rounded wing, the bird a ball-like appearance, much reminding a *Troglodytes*; rictal bristles short, plumage mottled above and below, the feathers on the back with white or pale fulvous shaft-streaks; rump-plumes unstriped, very long and fluffy, superciliary streak and triangular spots on the tips to the wing-coverts and inner secondaries white or pale fulvous. — Six species.

Range. Indian Continent, Sumatra, Java and Borneo.

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**Key to the species.**

- a.* Throat ashy, streaked with dusky, breast rufescent, washed with ashy . . . . . *brevicaudatus*.
- b.* Throat and breast ashy, streaked with dusky.
  - a'*. Dots on quills and wing-coverts fulvous . . . *striatus*.
  - b'*. Dots on quills and wing-coverts white . . . *leucostictus*.
- c.* Throat white, with black tips to the feathers, lower surface olive-brown, each feather with a broad white shaft-streak . . . . . *epilepidotus*.
- d.* Throat white or buffy white, rest of under surface buff with darker fulvous edgings to the feathers.
  - a'*. Ear-coverts rufescent . . . . . *Roberti*.
  - b'*. Ear-coverts ashy . . . . . *exsul*.

**1. *Turdinulus brevicaudatus*.**

*Turdinus brevicaudatus* Blyth, J. A. S. Beng. XXIV, p. 272 (1855).  
*Corythocichla brevicaudata* Sharpe, Cat. B. VII, p. 592 (1883); Oates,  
 B. Br. Ind. I, p. 148 (1889); id. Ibis 1894, p. 480.

H a b. Tenasserim and Upper Burma (Byinggyi Mountain).

**2. *Turdinulus striatus*.**

*Turdinus striatus* Wald. Ann. & Mag. Nat. Hist. (4) VII, p. 241 (1871).  
*Corythocichla striata* Sharpe, Cat. B. VII, p. 593 (1883); Oates, B.  
 Br. Ind. I, p. 148 (1889).

H a b. North-eastern Bengal.

**3. *Turdinulus leucostictus*.**

*Corythocichla leucosticta* Sharpe, P. Z. S. 1887, p. 438.

H a b. Perak (Malay Peninsula).

**4. *Turdinulus epilepidotus*.**

*Myiothera epilepidota* Temm. Pl. Col. II, pl. 448, fig. 2 (1827).  
*Myiothera murina* Blyth, Ibis 1865, p. 47 <sup>1</sup>).

1) As is already stated by Dr. Sharpe (N. L. M. 1884, p. 174) there does no bird exist in the Leyden Museum, which can be meant by Blyth with his *M. murina* S. Müll. than the Sumatran specimen of the present species, and the name *murina* must erroneously be given by him from memory, the only *Myiothera murina* Müll. in this Museum being *Crateroscelis murina* (see Sharpe, Cat. B. VII).

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*Turdinus epilepidotus* Sharpe, Cat. B. VII, p. 540, note (1883).

*Corythoichla epilepidota* Sharpe, N. L. M. 1884, p. 172.

Hab. Sumatra and Java.

The two typical specimens in the Leyden Museum. There are some rather striking differences in size and coloration between these two specimens, as is already plainly shown by Sharpe in his interesting article on this species in the N. L. M., differences which are not entirely due to the immature stage of the Javan specimen, and the Javan bird will, after all, very likely have to be specifically separated from the Sumatran, as soon as more material will be at hand for comparison.

### 5. *Turdinulus Roberti*.

*Pnoepyga Roberti* Godw. Aust. & Wald., Ibis 1875, p. 252; Hume Str. F. 1876, p. 218.

*Turdinulus Roberti* Hume & Davison, Str. F. 1878 (Vol. VI), p. 234.

*Turdinulus murina* Hume, Str. F. 1880, p. 115 (partim?)<sup>1)</sup>.

*Turdinulus murinus* Oates, B. Brit. Burma, p. 62 (1883); Sharpe, Cat. B. VII, p. 593 (partim); Oates, B. Br. Ind. I, p. 176 (1889).

This species, which is the type of the genus, is said by Godwin Austen and Walden to have the short tail completely concealed by the long and loose rump-plumes. This character, first mentioned in the original description, seems to be a peculiarity of this species only, but as it is not confirmed by authors who had other specimens at their disposal, I do not feel quite certain of its constancy.

Hab. Manipur hills to Muleyit in Tenasserim.

### 6. *Turdinulus exsul*.

*Turdinulus exsul* Sharpe, Ibis 1888, p. 479; id. id. 1889, p. 418;

Everett, Journ. Straits Branch R. As. Soc. 1889, p. 111; Sharpe,

Ibis 1890, pp. 279, 367; id. id. 1892, p. 433; Hose, Ibis 1893, p.

388; Sharpe, Ibis 1893, pp. 547, 550; id. id. 1894, p. 543.

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1) It is not fully clear which species Hume meant when writing about his *T. murina*, but as he speaks of the feathers on breast and abdomen being centrally streaked with buffy white in some of his birds, I guess that his specimens from Salangore (Malay Peninsula) may belong or at least be very closely allied to the Sumatran *T. epilepidotus*.

From Dr. Sharpe's short comparative diagnosis we learn that this species is closely allied to *T. Roberti*, from which latter it differs in having ashy instead of rufescent ear-coverts. I have never seen an authentic specimen of this species, which is recorded from Kina Balu and different mountains of Sarawak, but I obtained two specimens on Mount Liang Koeboeng, at a height of about 3000', which are most probably identical with the North-Bornean species. As *T. exsul* has never been plainly described, I add here a full description of my two specimens from the Liang Koeboeng.

General color on upper surface fulvous brown, tinged with olive on the mantle and upper wing-coverts, each feather, the hairy rump-plumes excepted, margined on its posterior half with black; the feathers on forehead, mantle and back with a distinct, pale fulvous shaft-streak; upper tail-coverts and tail dark chestnut-brown, contrasting with the paler, long and fluffy rump-plumes; wing earthy brown, primaries, secondaries and greater wing-coverts broadly edged on the outer web with chestnut-brown, the median and greater wing-coverts and inner secondaries tipped with triangular dirty white spots; lores and a distinct superciliary streak dull white, each feather distinctly margined with dark brown; sides of head, cheeks and moustachial streak pale fulvous, each feather tipped with white, as also a ring of feathers encircling the eye; ear-coverts ashy fulvous with white shafts; chin and throat dingy white, the moustachial feathers and some of the throat-feathers tipped with black, thus forming a narrow moustachial streak; rest of lower surface rusty brown, each feather, especially on the breast, with a large centre of pale fulvous or whitish buff, sides of breast a trifle darker, thighs and flanks darker rusty brown, unstriped and uncentred; under wing-coverts olive-gray, edge of wing rufous, under tail-coverts like the breast. Iris brown, bill horny black, lower mandible whitish, feet brown. Wing 5,8 cm.; tail 2,6; culmen 1,7; tarsus 2,2; middle toe with claw 1,9.

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Hab. Borneo: Kina Balu 4000-8000' (Whitehead), Mt. Penrisen and Mt. Poeh 4000-8000' (Everett), Mt. Dulit, Mt. Kalulong and Mt. Mulu 3000-4000' (Hose).

Two specimens collected during the last Dutch expedition to Central Borneo, on Mount Liang Koeboeng (875 Meter).

#### GENUS *Rimator*.

Type: *Rimator malacoptilus* Blyth, Journ. As. Soc. Beng. XVI, p. 155 (1847).

Small, bill long, slender and curved, as long as the tarsus, the latter as well as the toes long and stout, wing rounded, tail short, very little longer than the tarsus, no white spots on the tips of quills and wing-coverts, feathers on head, mantle, lesser wing-coverts, rump and upper tail-coverts with narrow, pale fulvous shaft-streaks, inner web of the feathers on the mantle black; lower surface pale fulvous on throat and centre of breast; chest and sides of breast brown with broad, pale fulvous shaft-streaks to the feathers. — One species.

Range. Sikkim and Manipur, British India.

##### 1. *Rimator malacoptilus*.

*Rimator malacoptilus* Blyth, Journ. As. Soc. Beng. XVI, p. 155 (1847); Sharpe, Cat. B. VII, p. 594 (1883); Oates, B. Br. Ind. I, p. 175 (1889).

Hab. The same as that of the genus.

Two specimens from Nepal in the Leyden Museum.

#### GENUS *Malacocincla*.

Type: *Malacocincla Abbotti* Blyth, Journ. As. Soc. Beng. XIV, p. 600 (1845).

This genus is sufficiently distinguished by the following characters:

Size about that of a sparrow; plumage never mottled on upper surface which is olive-brown; flanks and under tail-coverts more or less tinged with fulvous; bill short, clumsy and rather high, nasal aperture oval and placed

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in front of the nasal groove, which is covered by a membrane, rectal bristles rather strong, but never reaching far beyond the nostrils; wing rounded; tail short, not fully two thirds of the length of wing; tarsus and toes long, especially the hind toe, tarsus fairly two thirds of the length of tail and longer than one third of the length of the wing. — Five species.

Range. From British India through the Malay Peninsula down to Sumatra, Java and Borneo.

### Key to the species.

- a.* No white shaft-streaks on the chest.
  - a'.* Crown olive-brown like the back, or only a trifle different.
    - a''.* Forehead with conspicuous pale fulvous shaft-streaks . . . . . *Abbotti.*
    - b''.* Pale shaft-streaks on forehead obsolete or entirely wanting . . . . . *sepiaria.*
  - b'.* Crown strongly contrasting in color with the back.
    - a''.* Crown dark grayish brown, ear-coverts olive brown. . . . . *minor.*
    - b''.* Crown and ear-coverts ashy gray . . . . . *rufiventris.*
- b.* Chest and breast ashy gray, with distinct white shaft-streaks . . . . . *perspicillata.*

### 1. *Malacocincla Abbotti.*

*Malacocincla Abbotti* Blyth, Journ. As. Soc. Beng. XIV, p. 601 (1845); Salvad. Ucc. Born. p. 230 (1874).

*Trichastoma Abbotti* Blyth, Journ. As. Soc. Beng. XVI, p. 462 (1847); Bp. Consp. I, p. 259 (1850); Tweedd. Ibis 1877, p. 452, pl. XI, fig. 2.

*Malacopteron olivaceum* Strickl. Ann. & Mag. Nat. Hist. XIX, p. 132 (1847).

*Malacopteron Abbotti* Gray, Gen. B. III, App. p. 9 (1849).

*Myiothera concreta* Müll. MS. in Mus. Lugd.

*Myiothera Schwaneri* Temm. MS. in Mus. Lugd.

*Turdirostris concretus* (part.) Bp. Consp. I, p. 218 (1850).

*Trichostoma umbratile* Sclat. (nec Strickl.) P. Z. S. 1863, p. 215<sup>1</sup>).

1) Salvadori has with some reason referred Mr. Sclater's birds, which were collected by Motley at Banjermasin, to his *Malacocincla rufiventris*, but the

*Macronus concretus* Gray, Handl. I, p. 318 (1869).

*Macronus Abbotti* Gray, Handl. I, p. 318 (1869).

*Trichastoma olivaceum* Hume, Str. Feath. 1880, p. 108.

*Turdinus Abbotti* Oates, B. Brit. Burma, p. 58 (1883); Sharpe, Cat.

B. VII, p. 541 (1883); Everett, Journ. Straits Branch R. As. Soc.

1889, p. 108; Oates, B. Brit. Ind. I, p. 154 (1889).

(?) *Turdinus sepiarius* Sharpe, P. Z. S. 1888, p. 275 (Malacca).

Hab. Indian Continent, Malay Peninsula and Borneo.

Five specimens from British India and five from Borneo.

This species is distinguished from its congeners by the conspicuous fulvous shaft-streaks to the feathers of the forehead, which is, as a rule, more fulvous than crown and back. The Indian specimens have the hinder part of the lower surface ochraceous buff, deepening into rich tawny buff on vent and under tail-coverts. Sharpe (l.c.), who could compare a rather large series, says that the Malayan and Bornean specimens are less richly buff underneath than those of British India, but that the differences are too slight to found a specific difference upon. Our Museum does not possess any specimen from the Malay Peninsula, and our Bornean specimens showing the differences mentioned by Sharpe in a very strong degree, it is not without some reserve that I declare them to belong to this species. The pale shaft-streaks on the forehead are less fulvous and the birds are also very much less fulvous on the lower surface than the true *M. Abbotti*. Amongst our Bornean birds of this species are found a larger and a smaller form. One of the larger two, a female from the Kahajan River, is the type of *Myiothera concreta* Müll. MS., the other, likewise a female, has been collected by Schwaner, also in Southern Borneo. The two somewhat smaller specimens, also females, from the Karau River (a confluent to the Barito), bear the MS.-name *Myiothera Schwaneri* Temm. A specimen of the larger

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specimens being incorporated under the letters *p* and *q* to the series of *Turdinus Abbotti* in the British Museum, I have no doubt as to their real belonging to this species.

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kind (*M. concreta* Müll.) was obtained by me on the Sibau River (Upper Kapuas). All our five Bornean specimens have the frontal shaft-streaks less fulvous though not less distinct than the Indian specimens of this species, but the lower surface is much less rufescent. The two smaller specimens can hardly be distinguished from the Javan *M. sepiaria* (Horsf.) except by the pale frontal shaft-streaks, but I think it advisable to unite them with *M. Abbotti* rather than with *M. sepiaria*.

## 2. *Malacocincla sepiaria*.

*Brachypteryx sepiaria* Horsf. Trans. Linn. Soc. XIII, p. 158 (1822);

Gray, Gen. B. I, p. 209 (1846); id. Handl. B. I, p. 312 (1869).

*Alcippe sepiaria* Blyth, Journ. As. Soc. Beng. XIII, p. 384 (1844);

Bp. Consp. I, p. 260.

*Myiothera pyca* Boie, MS. in Mus. Lugd. (partim).

*Turdirostris pyca* Bp. Consp. I, p. 218 (1850).

*Bessethera pyca* (Boie) Cab. Mus. Hein. I, p. 76 (1850).

*Nannothera sepiaria* Sundev. Tentamen, p. 11 (1872).

*Trichostoma pyca* Nicholson, Ibis 1879, p. 168.

*Turdinus sepiarius* Sharpe, Cat. B. VII, p. 544 (1883); Meyer, Zeitschr. ges. Orn. 1884, p. 210.

Hab. Java.

Eight specimens in the Leyden Museum, amongst which the three types to the MS.-name *Myiothera pyca* Boie.

This species is distinguished by its respectively smaller size, its shorter and rather stout bill, the rather distinct ashy gray eyebrow, the faint ashy tinge on the olive-brown crown, the very faint and rather gray shaft-streaks to the feathers of the forehead, and by a broad centre on breast and abdomen being pure white, leaving only the flanks and under tail-coverts more or less fulvous.

## 3. *Malacocincla minor*.

*Myiothera pyca* (part.) Boie MS. in Mus. Lugd.

(?) *Turdinus sepiarius* (part.) Sharpe, Cat. B. VII, p. 544 (1883).

*Turdinus sepiarius* var. *minor* Meyer, Zeitschr. ges. Orn. 1884, p. 210.

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Hab. Java and Sumatra.

A male from Java (Kuhl & van Hasselt) and a female from Sumatra in the Leyden Museum.

Together with those of the preceding species, these two specimens bear the MS.-name *Myiothera pyca* Boie. They are exactly alike one another, but differ from *M. sepiaria* in having crown and nape dark ashy brown instead of olive-brown, the back more rufous brown instead of olive-brown, and the hinder part of the lower surface, especially vent and under tail-coverts, rich tawny brown. Dr. Meyer was so kind as to send me one of his *T. sepiarius* with which he compared the dark-headed form, and therefrom I conclude that the two above mentioned birds are identical with his var. *minor*. Dr. Meyer has found some differences in the measurements, especially in the length of the tail, but amongst our specimens of *M. sepiaria* there are several which do not differ in this respect from the dark-headed new species, so that this latter, therefore, is solely based upon some differences in the coloration.

The short diagnosis of *Brachypteryx sepiaria*, as given by Horsfield, does not mention any difference in color between the crown and the rest of the upper surface and consequently must be referred upon the pale-headed form, but the comparative description, given by Sharpe in his Catalogue — »head dusky ashy brown contrasting with the back” — seems to be referable to the dark-capped *M. minor*.

#### 4. *Malacocincla rufiventris*.

*Myiothera hypoides* Temm. MS. in Mus. Lugd.

*Turdirostris concreta* (part.) Bp. Consp. I, p. 218.

*Malacocincla rufiventris* Salvad. Ucc. Born. p. 229 (1874).

*Ptilopygia rufiventris* Sharpe, Cat. B. VII, p. 585 (1883); Everett, Journ. Straits Branch R. As. Soc. 1889, p. 110; Hose, Ibis 1893, p. 388.

*Turdinus tephrops* Sharpe, Bull. Br. Orn. Club, N° 10, p. 54 (1893); id. Ibis 1893, p. 549.

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Hab. Borneo.

The Leyden Museum contains the three typical specimens of *M. hypoides* Temm. (MS.), one of which collected by Schwaner on the Karau River, the two others by Diard near Pontianak, besides a fine series obtained by myself on the Liang Koeboeng Mountain.

This fine species is sufficiently characterized by the ashy gray crown and lighter gray sides of the head, the more or less distinct gray shaft-streaks on lower throat and chest and by the bright tawny buff flanks, thighs, vent and under tail-coverts. On account of its size and especially the short and stout bill it is more closely allied to *M. sepiaria* and *minor* than to *Abbotti*.

5. *Malacocincla perspicillata*.

*Myiothera perspicillata* Temm. MS. in Mus. Lugd.

*Cacopitta perspicillata* Bp. Consp. I, p. 257 (1850).

*Macronus perspicillatus* Gray, Handl. B. I, p. 318 (1869).

*Turdinus perspicillatus* Sharpe, Cat. B. VII, p. 540 (1883); id. N. L. M. 1884, p. 171.

Hab. Borneo.

The typical and as it seems hitherto unique specimen is in the Leyden Museum.

This species, the largest of the genus, is easily distinguished from all its congeners by the black forehead, continued by a rather broad black superciliary streak and a black spot before the eye, further by the conspicuous white lores and the white shaft-streaks on the ashy gray lower throat and chest. These peculiarities, together with the slight black edgings to the feathers of the crown and with the rather long wings, would show some relationship to the genus *Turdinus*, but the short tail and its proportion to the tarsi can leave no doubt as to its real position. Gray has mentioned as the habitat of this species Java and Sumatra, and Sharpe (Cat. Birds) Java, while the bird has been collected by Schwaner in Borneo.

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GENUS *Anuropsis*.

Type: *Anuropsis malaccensis* (Hartl.) Sharpe, Cat. B. VII, p. 588 (1883).

This genus belongs, together with *Malacocincla*, to the short-tailed birds of the group with plain-colored plumage, but differs from *Malacocincla* in having an obviously more slender, less clumsy bill in which the nasal aperture is linear and placed at the bottom of the membrane. Tail about half the length of the wing or only a little longer and about once and a half the length of the tarsus, which is, together with the rather long toes and claws, pale flesh-color in life and pale yellow in the skin. — Two species known.

Range. Malacca, Sumatra, Borneo and Philippine Archipelago.

## Key to the species.

- a.* Crown olive-brown or rufous, never gray. . . . . *malaccensis*.
- b.* Crown ashy gray. . . . . *cinereiceps*.

1. *Anuropsis malaccensis*.

*Myiothera poliogenis* Müll. MS. in Mus. Lugd.

*Brachypteryx malaccensis* Hartl. Rev. Zool. 1844, p. 402.

(?) *Brachypteryx polyogenys* Strickl. Contr. Orn. 1849, p. 93, pl. 31.

*Anuropsis malaccensis* Sharpe, Cat. B. VII, p. 588 (1883).

Hab. Malacca, Sumatra and Borneo.

The Leyden Museum contains two specimens (*Myiothera poliogenis* Müll. MS.) from Sumatra, another only marked Malaïasie, two specimens from Borneo, collected by Schwaner on the Karau River, also named *M. poliogenis* Müller, two specimens from Trusan (N. W. Borneo) and 13 specimens collected by myself in Central Borneo.

As is already stated by Sharpe in his Catalogue, this species shows great variation in color, which seems not to be fully understood as yet. Strange enough, there is not the least difference in coloration amongst my own 13 Bornean specimens, though they are from different loca-

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lities and dates and have both sexes represented. On the other hand these birds differ as well from the North-Bornean as from the Sumatran form and it is not impossible that later on terms will be found upon which to separate the birds into two or even more species.

## 2. *Anuropsis cinereiceps*.

*Drymocapthus cinereiceps* Tweedd. P. Z. S. 1878, p. 617.

*Anuropsis cinereiceps* Sharpe, Cat. B. VII, p. 590; Blas. Orn. 1888, p. 14; Whitehead, Ibis 1890, p. 50.

Hab. Island of Palawan.

Two specimens in the Leyden Museum, both collected by Dr. Platen.

## GENUS *Crateroscelis*.

Type: *Crateroscelis murina* (Temm.) Sharpe, Cat. B. VII, p. 590 (1883).

This genus stands very near *Anuropsis*, with which it agrees in the general appearance, the linear nasal apertures, the short tail and long tarsi, but it differs from it in having the bill more depressed and muscicapine and being of a smaller size. Tail somewhat more than half the length of the wing and but little longer than the tarsus. — Two species.

Range. New Guinea, Waigiou, Salawati, Mysol and Aru Islands.

## Key to the species.

- a.* Breast and flanks tawny buff . . . . . *murina*.
- b.* Breast light brown, flanks grayish brown . . . *monacha*.

## 1. *Crateroscelis murina*.

*Myiothera murina* Temm. MS. in Mus. Lugd. (nec Blyth, Ibis 1865, p. 47).

*Turdidostris murina* Bp. Consp. I, p. 158 (1850); Finsch, Neu-Guinea, p. 166 (1865).

*Sericornis fulvipectoris* Ramsay, Pr. Linn. Soc. N. S. W. IV, p. 5 (1879).

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*Crateroscelis murina* Sharpe, Cat. B. VII, p. 590 (1883); Salvad. Aggiunte, p. 135 (1890).

Hab. New Guinea, Waigiou, Salawati and Mysol.

A great series, amongst which the typical specimens, in the Leyden Museum.

## 2. *Crateroscelis monacha*.

*Alcippe monacha* Gray, P. Z. S. 1858, pp. 175 and 191.

*Crateroscelis monacha* Sharpe, Cat. B. VII, p. 591 (1883); Salvad. Aggiunte, p. 135 (1890).

Hab. Aru Islands.

One specimen in the Leyden Museum.

## GENUS *Amaurocichla*.

Type: The only species of the genus.

Similar to *Crateroscelis*, but distinguished by the shape of the wing, the first primary being nearly as long as the second. Bill as long as head, rictal bristles absent, tail-feathers somewhat acuminate (Sharpe).

## 1. *Amaurocichla Bocagei*.

*Amaurocichla Bocagei* Sharpe, P. Z. S. 1892, p. 228.

Hab. Island of St. Thomas, West-Africa.

## GENUS *Trichostoma*.

Type: *Trichostoma rostratum* Blyth, Journ. As. Soc. Beng. XI, p. 795 (1842).

Amongst the plain-colored birds of the present group this genus is distinguished by having the tail about twice as long as the tarsus, surpassing a little the outstretched feet. Upper surface olive-brown or olive-green, superciliary stripe indistinct or wanting. Wing about once and a half to once and a fourth the length of the tail, bill slender, never higher than broad, nasal aperture linear, rictal bristles well-developed, reaching as far as, or even beyond the nostrils, when directed forward. — Six species.

Range. Malay Peninsula, Sumatra, Borneo and Celebes.

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## Key to the species.

- a. Concealed white longitudinal shaft-streaks on the feathers of back and rump.
  - a'. Lower surface and under tail-coverts pure white, sides of breast and flanks brownish ashy. *rostratum*.
  - b'. Throat, centre of breast, abdomen and vent white, chest more or less shaded with ashy, sides of body ashy brown, under tail-coverts pale fulvous. . . . . *celebensis*.
  - c'. Lower surface fulvous, throat and centre of breast only white . . . . . *Finschi*.
- b. No white central streaks on upper surface.
  - a'. Upper surface rusty brown, sides of breast tawny buff.
    - a''. Crown olive-brown, ear-coverts bright tawny buff like sides of neck and breast, under tail-coverts white. . . . . *pyrrhogenys*.
    - b''. Crown slaty gray with fulvous shaft-streaks to the feathers of the forehead, ear-coverts brown with fulvous shafts, under tail-coverts tawny buff. . . . . *canicapillum*.
  - b'. Upper surface pale olive-brown, under surface white, sides of breast and flanks ashy olive. *Büttikoferi*.

1. *Trichostoma rostratum*.

*Trichostoma rostratum* Blyth, Journ. As. Soc. Beng. XI, p. 795 (1842); Bp. Consp. I, p. 259 (1850); Sharpe, Cat. B. VII, p. 562 (1883); Oates, B. Br. Ind. I, p. 153 (1889); Everett, Journ. Straits Branch R. As. Soc. 1889, p. 109; Sharpe, Ibis 1893, p. 119. *Malacopteron rostratum* Gray, Gen. B. I, p. 209 (1846); Blas. Verh. Z. B. Ges. Wien, XXXIII, p. 63.

*Myiothera umbratilis* Müll. MS. in Mus. Lugd.

*Napothera rufina* Temm. MS. in Mus. Lugd.

*Napothera umbratilis* Strickl. Contr. Orn. 1849, p. 128, pl. 35 (hind fig.).

*Turdirostris umbratilis* Bp. Consp. I, p. 218 (1850).

*Brachypteryx macroptera* Salvad. Atti R. Ac. Torino, III, p. 528 (1868).

*Macronus umbratilis* Gray, Handl. B. I, p. 319 (1869).

*Brachypteryx umbratilis* Salvad. Ucc. Born. p. 220 (1874) <sup>1</sup>).

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1) In this article Salvadori already points to the affinities between this species, *pyrrhogenys* and *celebensis*.

*Brachypteryx Buxtoni* Walden, P. Z. S. 1877, p. 367; id. Ibis 1877, p. 308, pl. VI.

*Ptilocichla leucogastra* Davison, Ibis 1892, p. 100.

Hab. Malay Peninsula, Sumatra and Borneo.

The Leyden Museum contains two specimens from Borneo and one from Sumatra under the MS.-name of *Myiothera umbratilis* Müll. and another from Borneo, with rufous wings (probably a sign of nonage) under the MS.-name of *Napothera rufina* Temm. Moreover it is now in possession of two other specimens, collected by me at Nanga Raoen in Central Borneo. One of these two specimens, a probably adult male, is quite a puzzle to me, as it has the tarsi much shorter than the normal specimens. While in these latter the length of the tarsus is 2,5 cm., it is in the abnormal specimen only 1,8 cm. As the bird otherwise agrees in every respect with *T. rostratum*, I dare not separate it from this species and rather yield to the opinion that we have to deal here with an abnormally developed specimen.

## 2. *Trichostoma celebense*.

*Trichostoma celebense* Strickl. Contr. Orn. 1849, p. 127, pl. 35 (front fig.); Walden, Ibis 1876, p. 378, pl. XI, f. 2; Brüggem. Abh. Nat. Ver. Brem. V, p. 63 (1878).

*Macronus celebensis* Gray, Handl. B. I, p. 318 (1869).

*Turdinus celebensis* Sharpe, Cat. B. VII, p. 542 (1883); Meyer & Wieglesw. Abh. u. Ber. Mus. Dresd. 1895, p. 12.

Hab. North Celebes.

Numerous specimens in the Leyden Museum.

## 3. *Trichostoma Finschi*.

*Trichostoma celebense* Wald. Trans. Z. S. VIII, p. 62, 1872 (nec Strickl.).

*Trichostoma Finschi* Wald. Ibis 1876, p. 378, pl. XI, f. 1.

*Turdinus Finschi* Sharpe, Cat. B. VII, p. 543 (1883); Bütt. in Weber, Zool. Ergebn. III, p. 276 (1894).

Hab. South Celebes.

Eight specimens in the Leyden Museum.

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4. *Trichostoma pyrrhogenys*.

*Myiothera pyrrhogenys* Temm. Pl. Col. II, pl. 442, f. 2. (1827).

*Macronus pyrrhogenys* Gray, Gen. B. I, p. 210 (1846); id. Handl.

B. I, p. 318 (1869).

*Turdirostris pyrrhogenys* Bp. Consp. I, p. 218 (1850).

*Brachypteryx pyrrhogenys* Salvad. Ucc. Born. p. 221 (1874).

*Malacopteryx erythrota* Sharpe, Cat. B. VII, p. 567, pl. XIII, f. 2 (1883); id. N. L. M. 1884, p. 174.

*Anuropsis pyrrhogenys* Sharpe, Cat. B. VII, p. 588, foot-note (1883).

*Malacopteryx pyrrhogenys* Sharpe, N. L. M. 1884, p. 175.

## H a b. Java.

The two typical specimens (♂ & ♀) in the Leyden Museum. Although Borneo is mentioned as habitat of this species by Gray (see also Salvad. l. c.) and also by Sharpe (Cat. VII, p. 568) it is very probable that Java is its sole habitat.

5. *Trichostoma canicapillum*.

*Turdinus canicapillus* Sharpe, Ibis 1887, p. 450; id. 1889, p. 415; id. 1890, pp. 278, 286, 289, 367; id. 1892, p. 433; id. 1894, p. 542.

## H a b. Borneo.

Three specimens, collected by me in Central Borneo.

There can be no doubt as to the identity of my specimens with *Turdinus canicapillus* Sharpe, the real place of which is in the genus *Trichostoma* on account of its slender bill with linear nasal aperture and of the longer tail, which is twice the length of the tarsus. It stands very near the preceding species, from which it differs in the dark gray cap, in the darker and distinctly streaked ear-coverts and the fulvous instead of white under tail-coverts.

6. *Trichostoma Büttikoferi*.

*Trichostoma Büttikoferi* Vorderm. Nat. Tijdschr. Ned. Indie, 1892, p. 230.

## H a b. Sumatra.

The typical specimen from the Lampongs, South Sumatra, presented to the Leyden Museum by Dr. Vorderman.

The above cited periodical being not easily accessible to

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every one and the species being only known from our typical specimen, it will be advisable to add here a short description of it.

Upper surface pale olive-brown, the forehead somewhat paler with a conspicuous white shaft-streak to each feather, the crown-feathers with white shaft-streaks and very narrow black terminal edgings to each feather, quills and tail-feathers sooty brown with the outer edges like back and wing-coverts, loral feathers white at their base, an indistinct eyebrow ashy with whitish shaft-streaks, ear-coverts pale fulvous with white shaft-streaks, cheeks, chin, throat and a broad median line along the lower surface white, the chest slightly tinged with ashy, sides of neck and body, flanks and thighs ashy brown, under tail-coverts white with a fulvous hue, under wing-coverts and inner edge of the quills white. Bill pale brown, lower mandible whitish, feet yellowish white. Wing 6, 6 cm., tail 5, 2, tarsus 2, 7, culmen 1, 5.

#### GENUS *Drymocataphus*.

Type: *Drymocataphus nigrocapitatus* (Eyt.) Blyth, Journ. As. Soc. Beng. XVIII, p. 815 (1849).

This genus is easily distinguished by the following combination of characters: Bill slender, nasal aperture linear, rictal bristles wanting or feebly developed, never surpassing the nostrils, tarsus half the length of the tail, long, toes large and strong, above the eye a pale superciliary stripe. — Ten species.

Range. From British India through the Malay Peninsula to Sumatra, Java, Borneo and Celebes.

#### Key to the species.

*a.* Crown black.

*a'*. Breast orange rufous, legs brown in skin.

*a''*. Superciliary stripe orange rufous . . . . *capistratus*.

*b''*. Superciliary stripe white, sides of head black. *capistratoides*.

*c''*. Superciliary stripe gray, a malar streak

only black . . . . . *nigrocapitatus*.

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- b'*. Breast white like the throat, legs pale yellow in skin.  
*a''*. Paler, chest whitish ashy. . . . . *Cleareri*.  
*b''*. Darker, chest ashy gray . . . . . *Johnsoni*.  
*b*. Crown not black.  
*a'*. Eyebrow white, hinder part of it ashy . . . *castaneus*.  
*b'*. Eyebrow gray or grayish brown.  
*a''*. No pale shaft-streaks on forehead and crown *ignotus*.  
*b''*. Forehead with pale shaft-streaks, crown pale shafted . . . . . *assamensis*.  
*c'*. Eyebrow fulvous.  
*a''*. Feathers on crown pale-shafted, lower surface fulvous. . . . . *Tickelli*.  
*b''*. Feathers on crown uniform, lower surface bright ferrugineous . . . . . *rubiginosus*.

### 1. *Drymocataphus capistratus*.

- Myiothera capistrata* Temm. Pl. Col. II, pl. 185 (1823); Strickl. Contr. Orn. 1849, p. 128.  
*Turdirostris capistrata* Bp. Consp. I, p. 217 (1850).  
*Bessethera capistrata* Cab. Mus. Hein. I, p. 76 (1850); Sundev. Tent. p. 10 (1872).  
*Drymocataphus capistratus* Salvad. Ucc. Born. p. 219 (1874); Nicholson, Ibis 1879, p. 168; Sharpe, Cat. B. VII, p. 553 (1883).

Hab. Java.

The two typical specimens (♂ & ♀), besides four others, in the Leyden Museum.

### 2. *Drymocataphus capistratoides*.

- Myiothera capistratoides* Temm. MS. in Mus. Lugd.  
*Goldana capistratoides* Strickl. Contr. Orn. 1849, p. 128, pl. 36.  
*Turdirostris capistratoides* Bp. Consp. I, p. 218 (1850); id. C. R. XXXVIII, p. 59 (1854).  
*Drymocataphus capistratoides* Strickl. Contr. Orn. 1851, p. 16; Salvad. Ucc. Born. p. 218 (1874); Sharpe, Ibis 1877, p. 11; id. 1879, p. 258; id. P. Z. S. 1881, p. 797; id. Cat. B. VII, p. 555 (1883); id. Ibis 1889, p. 415; Everett, Journ. Straits Branch R. As. Soc. 1889, p. 109; Hose, Ibis 1893, p. 387; Sharpe, Ibis 1893, p. 547; id. 1894, p. 543.  
*Macronus capistratus* Pelz. (part.) Reise Novara, Vög. pp. 69, 161 (1865).  
*Macronus capistratoides* Gray (part.) Handl. B. I, p. 318 (1869).  
*Myiothera capistrata* Blyth, Ibis 1870, p. 170.

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Hab. Borneo.

Two specimens, amongst which Temminck's type, and a third obtained by me on Mount Kenepai, West of the Batang Lupar-lakes.

### 3. *Drymocapthus nigricapitatus*.

*Brachypteryx nigro-capitata* Eyt. P. Z. S. 1839, p. 103; Blyth, Journ. As. Soc. Beng. XIII, p. 385 (1844).

*Drymocapthus nigrocapitatus* Blyth, Journ. As. Soc. Beng. XI, p. 796 (1842); Sharpe, Cat. B. VII, p. 554 (1883); id. P. Z. S. 1888, p. 275.

For further references see Sharpe's Catalogue.

Hab. Malay Peninsula, Sumatra, Banka and Billiton.

Two specimens from Sumatra and one from Banka.

### 4. *Drymocapthus Cleaveri*.

*Drymocapthus Cleaveri* Shelley, Ibis 1874, p. 89; Sharpe, Cat. B. VII, p. 556 (1883).

Hab. Gold Coast, West-Africa.

### 5. *Drymocapthus Johnsoni*.

*Drymocapthus Cleaveri* Büttik. N. L. M. 1888, p. 77.

*Drymocapthus Johnsoni* Büttik. N. L. M. 1889, p. 97.

Hab. Liberia, West-Africa.

The typical specimen in the Leyden Museum.

### 6. *Drymocapthus castaneus*.

*Turdinus castaneus* Büttik. N. L. M. 1893, p. 261; Meyer & Wiglesw. Abh. u. Ber. Mus. Dresd. 1895, p. 12.

Hab. North Celebes.

The typical specimen in the Leyden Museum.

To the original description of this species may be added that the superciliary streak is margined below by a dark brown line running from the base of the upper mandible through the eye above the ear-coverts.

7. *Drymocataphus ignotus*.

*Pellorneum ignotum* Hume, Str. Feath. V, p. 334 (1877); id. id. VII, p. 143, note (1878); id. id. XI, p. 146 (1888); Oates, B. Br. Ind. I, p. 144 (1889).

*Turdinus nagaensis* Godw.-Aust. Ann. & Mag. Nat. Hist. (4) XX, p. 519 (1877); Hume, Str. Feath. VII, p. 143 (1878).

*Drymocataphus ignotus* Sharpe, Cat. B. VII, p. 556 (1883).

Hab. Bengal and Assam.

This and the following species of this genus are not represented in the Leyden Museum, and therefore my arrangement may not be quite correct. The present species, placed under *Drymocataphus* by Sharpe, is brought back by Oates (l.c.) to *Pellorneum* on account of the (although very insignificant) longitudinal stripes on the chest. I have, however, accepted the view of Sharpe's, as I find the tail not long enough in proportion to the tarsus to range it under *Pellorneum*.

8. *Drymocataphus assamensis*.

*Pellorneum Tickelli* (nec Blyth) Hume & Davis. Str. Feath. VI, pp. 277, 514 (1878); Hume, Str. Feath. VII, p. 143, note (1878); id. Ibis, 1878, p. 114; id. Str. Feath. VIII, p. 96 (1879).

*Turdinus garoensis* Godw.-Aust. Journ. As. Soc. Beng. XLV (2) p. 75 (1876).

*Drymocataphus assamensis* Sharpe, Cat. B. VII, p. 557 (1883); Oates B. Br. Ind. I, p. 147 (1889).

Hab. Assam and North-eastern Bengal.

9. *Drymocataphus Tickelli*.

For synonymy and other references see Sharpe, Cat. B. VII, p. 557 (1883) and Oates, B. Br. Ind. I, p. 146 (1889).

Hab. Pegu and Tenasserim.

10. *Drymocataphus rubiginosus*.

*Trichostoma rubiginosa* Wald. Ann. and Mag. Nat. Hist. (4) XV, p. 402 (1875); id. in Blyth, Birds Burma, p. 115 (1875); Hume and

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Davison. Str. Feath. VI. p. 260 (1878); Hume, Str. Feath. VIII, p. 95 (1879).

*Drymocapthus rubiginosus* Oates, B. Br. Burma, I. p. 65; Sharpe, Cat. B. VII. p. 554 (1888); Oates, B. Br. Ind. I. p. 145 (1889).

Hab. Burma.

### GENUS *Drymochaera*.

Type: The only species of the genus.

As to the generic characters see my foot note, antea p. 67.

#### 1. *Drymochaera badiceps*.

*Drymochaera badiceps* Finch. P. Z. S. 1876. pp. 19, 20; Sharpe, Cat. B. VII. p. 550 (1888).

*Vitia ruficapilla* Ramsay, Proc. Linn. Soc. N. S. W. I. p. 41 (1876).

Hab. Viti Levu.

### GENUS *Scotocichla*.

Type: The only species of the genus.

Bill slender, narrow, nasal aperture linear, rictal bristles extremely short, tail graduated, nearly as long as the wing, tarsi and toes very long and stout, the first less than half the tail in length, crown darker than the back, the rusty fulvous sides of the head reaching above the eye, thus forming a broad eyebrow of that color. It differs from *Drymocapthus*, which it otherwise much resembles, by the tail being more than twice the length of the tarsus, and from *Pellorneum*, under which it is ranged by Oates, by the dark cap and the absolute want of the dark shaft-stripes on the lower surface.

#### 1. *Scotocichla fuscicapilla*.

*Drymocapthus fuscicapillus* Blyth, Journ. As. Soc. Beng. XVIII. p. 515 (1849).

*Pellorneum fuscicapillum* Blyth, Ibis 1867. p. 301; Hume, Str. Feath. I. p. 299 (1878); Legge, Birds Ceylon. p. 510, pl. 23. f. 1 (1879); Oates, B. Br. India, I. p. 143 (1889).

*Scotocichla fuscicapilla* Sharpe, Cat. B. VII. p. 522 (1888).

Hab. Ceylon.

One specimen in the Leyden Museum.

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GENUS *Ortygocichla*.

Type: The only species of the genus.

Bill slender, but rather broad at the base, rictal bristles short, reaching the nasal aperture, which is linear, tail strongly graduated (the outermost pair of tail-feathers very short) nearly as long as the wing, tarsi and toes long and strong, the first less than half the length of the tail, crown like the back in color, the rusty-red sides of the head reaching above the eye, thus forming a broad eyebrow of this color. This genus differs from the preceding by the broader bill, the longer rictal bristles and the crown being of the same color as the back.

1. *Ortygocichla rubiginosa*.

*Ortygocichla rubiginosa* Salazar, P. Z. S. 1831, p. 452, pl. 52; Salvadori, Orn. Pap. II, p. 279 (1881); Sharpe, Cat. B. VII, p. 461 (1888).

Hab. New Britain.

An adult female, collected by Dr. Kleinschmidt, in the Leyden Museum.

GENUS *Elaphrornis*.

Type: The only species of the genus.

Bill slender, nasal aperture linear, rictal bristles very short, tail somewhat longer than wing, strongly graduated, twice and a half the length of the tarsus; this latter strong, more than an inch in length; toes long. Very modestly colored, above olive-brown, beneath grayish olive-green, eyebrow mouse-gray.

1. *Elaphrornis Palliseri*.

*Brachypteryx Palliseri* Blyth, Journ. As. Soc. Beng. XX, p. 173 (1881). *Elaphrornis palliseri* Legge, B. Ceylon, p. 514, pl. XXIV, fig. 2 (1879); Sharpe, Cat. B. VII, p. 517 (1888).

Hab. Ceylon.

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GENUS *Mülleria*, n. g.

Type: The only species of the genus.

Bill slender, nasal aperture distinctly linear and placed at the lower edge of the membrane, rictal bristles very short, tail somewhat longer than the wing, more than twice and a half the length of the tarsus, rounded, the outermost tail-feather much shorter than the second; tarsus more than an inch in length, strong, toes long and strong.

This genus stands very near *Drymocataphus* as to its slender bill, the shortness of the rictal bristles, the strong feet and the distinct pale eyebrow, but differs from it by the rufous cap and the tail being longer than the wing.

Sharpe, in his Catalogue VII, has ranged this bird under *Dumetia*, but this latter belongs to quite a different type on account of the quite different shape of the bill, and the rounded nasal aperture, the regularly graduated, almost cuneate tail, which is nearly or fully three times the length of the tarsus, and being altogether a much smaller bird than our Timor species.

1. *Mülleria bivittata*.

*Napothera bivittata* Bp. Consp. I, p. 359 (1850), ex Müll. MS. in Mus. Lugd.

*Drymocataphus bivittatus* Wall. P. Z. S. 1863, p. 489.

*Timalia bivittatus* Gray, Handl. B. I, p. 315 (1869).

*Dumetia bivittata* Sharpe, Cat. B. VII, p. 516 (1883).

Hab. Timor.

The typical specimen (♂), collected by S. Müller, in the Leyden Museum.

GENUS *Pellorneum*.

Type: *Pellorneum ruficeps* Swains. Fn. Bor.-Am., Birds, p. 487 (1831).

Bill slender, nasal opening linear, rictal bristles short, not reaching to the nostrils; tail as long as the wing, strongly rounded, about twice and a half the length of



the tarsus; this latter strong, at least an inch in length, toes long and strong. Crown more or less rufous, bordered by a distinct, paler eyebrow; lower surface, at least the chest, distinctly striped with brown. — Five species.

Range. British India.

#### Key to the species <sup>1)</sup>.

a. Mantle streaked.

a'. Forehead and eyebrow with black shaft-streaks *Mandellii*.

b'. Forehead and eyebrow with only a few black specks at the ends of the feathers. . . . . *minor*.

b. Mantle not streaked.

a'. Crown rufous . . . . . *ruficeps*.

b'. Crown chestnut . . . . . *subochraceum*.

c'. Crown brown . . . . . *palustre*.

#### 1. *Pellorneum Mandellii*.

*Hemipteron nipalense* Hodg. in Gray's Zool. Misc. p. 83 (1844, descr. nulla).

*Pellorneum Mandellii* Blanf. J. A. S. Beng. XLI, pt. II, p. 165, pl. VII (1872); Oates, B. Br. Ind. I, p. 140 (1889).

*Pellorneum nipalense* Hume, N. & E. p. 248; Blanf. Stray Feath. VIII, p. 181 (1879); Sharpe, Cat. B. VII, p. 518 (1883).

Hab. British India.

Two specimens from Nepal in the Leyden Museum.

#### 2. *Pellorneum minor*.

*Pellorneum minor* Hume, Str. F. I, p. 298 (1873); id. III, p. 120 (1875).

*Pellorneum intermedium* Sharpe, Cat. B. VII, p. 519, pl. XIII, f. 1 (1883); Oates, B. Br. Burmah, I, p. 67 (1883); Salvad. Ann. Mus. Civ. Gen. (2) IV, p. 597 (1886).

*Pellorneum minus* Oates, B. Br. Ind. I, p. 141 (1889).

Hab. British India, from Cachar up to Thayetmyo.

#### 3. *Pellorneum ruficeps*.

*Pellorneum ruficeps* Swains. Faun. Bor.-Amer., Birds, p. 487 (1831); Sharpe, Cat. B. VII, p. 520 (1883); Oates, B. Br. Ind. I, p. 141 (1889).

Hab. Indian Peninsula.

One specimen from Malabar in the Leyden Museum.

<sup>1)</sup> I accepted, for this genus, the key in Oates, B. Br. India, omitting the species *fuscicapillum* and *ignotum*, which both belong to other genera.

4. *Pellorneum subochraceum*.

*Pellorneum subochraceum*, Swinh. Ann. & Mag. Nat. Hist. (4) VII, p. 257 (1871); Sharpe, Cat. B. VII, p. 521 (1883); Oates, B. Br. Ind. I, p. 142 (1889).

Hab. Pegu and Tenasserim, Malay Peninsula and Salanga.  
Three specimens from Tenasserim in the Leyden Museum.

5. *Pellorneum palustre*.

*Pellorneum palustre* Gould, B. Asia, III, pl. 65 (1872); Sharpe, Cat. B. VII, p. 522 (1883); Oates, B. Br. Ind. I, p. 143 (1889).

Hab. Assam and the foot of the Khasi hills.

GENUS *Erythrocichla*.

Type: The only species of the genus.

Bill long and strong, rather broad at the base, nasal aperture linear, rictal bristles long and rigid, reaching beyond the nostrils, tail much shorter than the wing, rounded, somewhat more than double the length of the tarsus, the latter very strong, as also the toes. Upper surface fulvous, tail rufous, no superciliary streak, lower surface white, chest and flanks tinged with fulvous.

1. *Erythrocichla bicolor*.

As to the synonymy see Sharpe, Cat. B. VII, p. 551 (1883), who is the author of the genus.

Hab. Malay Peninsula, Sumatra and Borneo.

Two specimens from Sumatra and one from Borneo, the types of *Napothera rubicauda* Bp., besides another specimen from Malacca and two from Central Borneo (Dutch Borneo Exped. 1894).

GENUS *Illadopsis*.

Type: *Illadopsis fulvescens* Heine, J. f. O. 1859, p. 430.

Very near *Trichostoma celebensis* and *Finschi* in size, proportion, general appearance and coloration, but wanting

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the white hidden shaft-streaks on the back. Bill slender but nevertheless rather strong, nasal aperture oval, placed in front of the nasal groove, rictal bristles long, reaching as far as or slightly surpassing the nostrils, tail a little more graduated than in *Trichostoma*, much shorter than the wing, but not much more than twice the length of the tarsus, this latter strong, about an inch long, toes moderately long, no pale eyebrow. — Six species.

Range. Tropical West-Africa, including the Upper Congo Region.

The different species of this genus being so much alike one another in the style of coloration, and having only two species before me, I am unable, without disposing of a larger material, to construct a key and must, therefore, content myself with a mere enumeration of the species and their distribution.

### 1. *Illadopsis fulvescens* <sup>1)</sup>.

*Turdirostris fulvescens* Cass. Phil. Acad. 1859, p. 54; Hartl. J. f. O.

1861, p. 173; Rchw. J. f. O. 1890, p. 128; id. id. 1894, p. 42.

*Illadopsis fulvescens* Heine, J. f. O. 1859, p. 430.

*Alethe fulvescens* Gray, Handl. B. I, p. 319 (1869).

*Trichastoma fulvescens* et *rufipennis* Sharpe, Ann. & Mag. Nat. Hist.

(4) X, p. 451 (1872).

(?) *Trichostoma fulvescens* Sharpe & Bouv. Bull. Soc. Zool. France,

1877, p. 479; Boc. Orn. d'Ang. p. 552 (1881).

*Turdinus fulvescens* Sharpe, Cat. B. VII, p. 545 (1883); Shelley,

Ibis 1890, p. 161; Rchw. J. f. O. 1894, p. 42.

(?) *Turdinus albipectus* Rchw. J. f. O. 1887, p. 307.

Hab. Lower Guinea, from the Cameroons to the Congo, and Upper Congo (Yambuya).

### 2. *Illadopsis gularis*.

*Illadopsis gularis* Sharpe, Ibis 1870, p. 474; Ussher, Ibis 1874, p. 57.

*Trichastoma gularis* Sharpe, Ann. & Mag. Nat. Hist. (4) X, p. 451 (1872).

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1) With this species Capt. Shelley (Ibis 1890, p. 161) identified *Turdinus albipectus* Rchw. (J. f. O. 1887, p. 307), which species is said by its author to be distinguished from *T. fulvescens* by the dark brown crown and having throat and centre of breast and abdomen pure white.

(?) *Trichostoma fulvescens* Sharpe & Bouv. Bull. Soc. Zool. France, 1877, p. 479.

*Turdinus gularis* Sharpe, Cat. B. VII, p. 543, pl. XIV (1883); Büttik. N. L. M. 1885, p. 178; id. id. 1886, p. 254; id. id. 1888, p. 77.

(?) *Turdinus fulvescens* Büttik. N. L. M. 1888, p. 77; id. id. 1889, p. 120; id. id. 1890, p. 203.

Hab. Upper Guinea, from Liberia to the Gold Coast.

The typical specimens, besides some others from Liberia in the Leyden Museum. It is not impossible that my Liberian specimen of *I. fulvescens* after all must be united with the present species.

### 3. *Illadopsis rufescens*.

*Turdirostris rufescens* Rchw. J. f. O. 1878, p. 209; Sharpe, Cat. B. VII, p. 544 (1883).

Hab. Upper Guinea, ranging from Liberia to the Gold Coast.

The type of this species was collected by Schweitzer in Liberia, but although I have visited the same localities where Schweitzer obtained his material, I never found a specimen fully agreeing with the description of this species.

### 4. *Illadopsis Moloneyanus*.

*Turdinus Moloneyanus* Sharpe, P. Z. S. 1892, p. 228, pl. XX, f. 2; Rchw. J. f. O. 1894, p. 42.

Hab. Gold Coast.

### 5. *Illadopsis rufiventris*.

*Turdinus rufiventris* Rchw. Orn. Monatsber. 1893, p. 177; id. J. f. O. 1894, p. 42.

Hab. Cameroons.

### 6. *Illadopsis monachus*.

*Turdinus monachus* Rchw. J. f. O. 1892, pp. 193 and 222.

Hab. Cameroons.

Another species, described as *Turdirostris leptorhynchus*

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Rehw. Orn. Centrbl. 1879, p. 155, is afterwards (J. f. O. 1891, p. 219) declared by the same author to be a *Calamocichla* and still later united by Sharpe (Ibis 1892, p. 154) with *Calamonastes*.

GENUS ***Ophrydornis***, n. g.

Type: The only species of the genus.

Bill slender, but broader than high at the nostrils, and much shorter than the head, nasal aperture placed obliquely in front of the nasal groove, rictal bristles very rigid and long, reaching far beyond the nostrils, tail rounded, not much graduated, much shorter than the wing, which is very long for the size of the bird, and twice and a quarter of the length of the tarsus; this latter and the toes very thin and slender. Centre of breast and abdomen and a distinct eyebrow, beginning at the base of the nostrils and ending above the hind angle of the eye, pure white, the feathers of the fore-part of the eyebrow rigid, erect and somewhat lengthened, a few of them rusty yellow. This genus differs from *Malacopteron* by a quite other proportion between tarsus and tail, by the shorter and broader bill and by the white, peculiarly shaped eyebrow.

1. *Ophrydornis albigularis*.

*Setaria albigularis* Blyth, Journ. As. Soc. Beng. XIII, p. 385 (1844);  
Salvad. Ucc. Born. p. 232 (1874).

*Malacopteron albigulare* Sharpe, Cat. B. VII, p. 568 (1883); Everett,  
Journ. Straits Branch R. As. Soc. 1889, p. 106.

Hab. Malacca and Borneo.

Four specimens from Borneo in the Leyden Museum.

GENUS ***Malacopteron*** <sup>1)</sup>.

Type: *Malacopteron magnum* Eyt. P.Z.S. 1839, p. 102.

Bill long and rather stout, not fully as long as the

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1) *Setaria cinereicapilla* (Salvad. Ucc. Born. p. 234) is mentioned in a foot-

head, as high at the nostrils as it is broad, nasal aperture oval and placed in front of the nasal groove, rictal bristles long, reaching beyond the nostrils; tail considerably much shorter than the pointed wing, but three times as long as the tarsus, which is remarkably short, not more than an inch in length, toes rather short and weak in proportion to the tarsus. — Nine species known.

Range. Malay Peninsula, Sumatra, Banka, Java, Borneo and Palawan.

### Key to the species.

- a.* Fore part of head rufous, tipped with black.
  - a'.* Nape black.
    - a''.* Larger, throat and chest streaked with gray *magnum*.
    - b''.* Smaller, throat and chest unstreaked. . . *cinereum*.
  - b'.* Nape olive-brown.
    - a''.* Smallest, culmen 1,5 cm. . . . . *rufifrons*.
    - b''.* Larger, culmen 1,7 cm. . . . . *lepidocephalum*.
    - c''.* Very large, culmen 2,1 cm. . . . . *palawanense*.
- b.* Fore part of head not rufous.
  - a'.* Forehead and crown olive like the back, a distinct moustachial streak slaty gray . . . . . *maguirostre*.
  - b'.* Crown different from back.
    - a''.* Crown sooty brown, front more or less tinged with fulvous brown, no dark moustachial streak . . . . . *affine*.
    - b''.* Crown dusky gray, moustachial streak ash gray . . . . . *kalulongae*.
    - c''.* Crown dull black. . . . . *melanocephalum*.

### 1. *Malacopteron magnum*.

*Malacopteron magnum* Eyt. P. Z. S. 1839, p. 103; Bp. Consp. I, p. 259 (1850).

*Malacopteron majus* Blyth, Journ. As. Soc. Beng. XVI, p. 461 (1847);

Bp. Consp. I, p. 259 (1850); Salvad. Ucc. Born. p. 225 (1874).

*Napothera pileata* Müll. MS. in Mus. Lugd.; Bp. Consp. I, p. 359 (1850).

*Malacopterum magnum* Sharpe, Cat. B. VII, p. 564 (1883) *et auct. rec.*

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note in Sharpe, Cat. B. VII, p. 563, as a doubtful species of *Malacopteron*, which perhaps would better be placed under *Rhinomyias*. I also yield to this latter opinion on account of Salvadori's expression: "il becco largo depresso, robusto et con forti setole alla base."

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Hab. Malay Peninsula, Sumatra and Borneo.

One specimen, one of the types of *Napothera pileata* Bp., from Sumatra and six, amongst which the other types of *N. pileata*, from Borneo.

## 2. *Malacopteron cinereum*.

*Malacopteron cinereus* Eyt. P.Z.S. 1839, p. 103; Gray, Gen. B. I, p. 209 (1846).

*Malacopteron magnum* (nec Eyt.) Blyth, Journ. As. Soc. Beng. XVI, p. 461 (1847).

*Napothera coronata* Müll. MS. in Mus. Lugd.; Bp. Consp. I, p. 358 (1850); Blyth, Ibis 1870, p. 170.

*Malacopteron coronatum* Strickl. in Blyth, Cat. B. Mus. As. Soc. p. XXI (1852); Motley & Dillw. Nat. Hist. Labuan, p. 21, pl. 5 (1855).

*Malacopteron cinereum* Gray, Handl. B. I, p. 317 (1869) *et auct. rec.*

Hab. Malay Peninsula, Sumatra and Borneo.

Two specimens, the types of *Napothera coronata* Bp., and three specimens from Borneo in the Leyden Museum.

## 3. *Malacopteron rufifrons*.

(?) *Fourmillier à calotte rousse*, Hombr. & Jacq. Voy. Pôle Sud, Atlas, pl. 19, fig. 1.

*Lanius rufifrons* Licht. Mus. Berol.

*Malacopteron rufifrons* Cab. Mus. Hein. Th. I, p. 65 (1850); Licht. Nomencl. p. 11 (1854); (?) Salvad. Ucc. Born. p. 227 (1874).

(?) *Timalia ruficapilla* Jacq. & Pucher. Voy. Pôle Sud, Ois. III, p. 89 (1853).

(?) *Timalia squamifrons* Bp. Comptes Rend. XXXVIII, p. 59 (1854, ex Puch. MS.).

*Macronus rufifrons* (part.) Gray, Handl. B. I, p. 318 (1869).

(?) *Macronus ruficapillus* Gray, Handl. B. I, p. 318 (1869).

*Napothera lepidcephala* (part.) Müll. MS. in Mus. Lugd.; (part.) Blyth, Ibis 1870, p. 170.

*Macronus lepidcephalus* (part.) Gray, Handl. B. I, p. 318 (1869).

*Malacopteron lepidcephalum* (part.) Sharpe, Cat. B. VII, p. 567 (1883).

Hab. Sumatra, (?) Borneo: Poeloe Laut, Hombr. & Jacq.

Two specimens (the types of *Napothera lepidcephala* Müll.) in the Leyden Museum.

Up to this date the Javan birds have always been

identified with the Sumatran, which are considerably much smaller than those from Java, as will be seen in the comparative measurements given below. It is the Sumatran bird upon which this species is founded by Cabanis, and therefore this name will have to stand above *lepidocephala*. As we do not know precisely which species is meant by the name *Timalia ruficapilla* Jacq. & Pucheran, which is bestowed upon a specimen said to come from Poeloe Laut (S. E. Borneo) and the present species not having been recorded from Borneo by anybody else, it is very doubtful whether this species really occurs on that island. The name *rufifrons* Cab. being prior to *lepidocephalum*, which embraced both the Sumatran and the Javan species, I propose to restrict the latter name upon the Javan species.

The following are the measurements of our Sumatran and Javan specimens:

		wing	tail	tars.	culm.
<i>rufifrons</i>	(Sum.) ♂ 7, ♀ 6,6 cm.	6	2	1,5	
<i>lepidocephalum</i>	(Java) 7,4 cm.	6,2	2,1	1,7	

#### 4. *Malacopteron lepidocephalum*.

*Macronus rufifrons* (part.) Gray, Handl. B. I, p. 318 (1869).

*Napothera lepidocephala* (part.) Müll. MS. in Mus. Lugd.; (part.) Blyth, Ibis 1870, p. 170.

*Macronus lepidocephalus* (part.) Gray, Handl. B. I, p. 318 (1869).

*Malacopteron lepidocephalum* (part.) Sharpe, Cat. B. VII, p. 567 (1883).

Hab. Java.

Similar to the preceding species, but larger.

Three specimens, all belonging to the types of *Napothera lepidocephala* Müll.

#### 5. *Malacopteron palawanense*, nov. nom.<sup>1)</sup>

*Trichostoma rufifrons* (nec Cab.) Tweedd. P. Z. S. 1878, p. 616, pl. 38.

*Turdinus rufifrons* (nec Cab.) Sharpe, Cat. B. VII, p. 546 (1883);  
id. Ibis 1884, p. 320; Whitehead, Ibis 1890, p. 50.

Hab. Island of Palawan.

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1) The specific name *rufifrons* being already used for the Sumatran species of this genus, I am obliged to bestow a new name upon the present species.



Two specimens in the Leyden Museum.

This bird is a true *Malacopteron*, and the largest of the genus. The male specimen in our Museum has the throat distinctly striped, the female not.

#### 6. *Malacopteron magnirostre*.

*Alcippe magnirostris* Moore, P.Z.S. 1854, p. 277; Horsf. & Moore, Cat. B. E. I. Co. Mus. I, p. 407 (1854).

*Malacopteron magnirostris* Gray, Handl. B. I, p. 317 (1869); Hume & Davison, Str. Feath. 1878, p. 274; Hume, Str. Feath. 1879, pp. 61 and 96.

*Malacopteron magnirostre* Oates, B. Br. Burma, I, p. 56 (1883); id. B. Br. Ind. I, p. 151 (1889).

*Turdinus magnirostris* Sharpe, Cat. B. VII, p. 547 (1883); id. Ibis 1889, p. 415; id. id. 1890, pp. 278 and 286; id. id. 1893, pp. 548 and 549.

Hab. Malay Peninsula, extending northward to Tenasserim and Cochin China; Sumatra and Borneo.

One specimen from Singapore and four from Sumatra in the Leyden Museum.

#### 7. *Malacopteron affine*.

*Trichastoma affine* Blyth, Journ. As. Soc. Beng. XI, p. 795 (1842).

*Alcippe affinis* Blyth, l. c. XIII, p. 384 (1844) et XIV, p. 462 (1847); Bp. Consp. I, p. 259 (1850); Moore, P.Z.S. 1854, p. 277.

*Malacopteron affine* Gray, Gen. B. I, p. 209 (1846); id. Handl. B. I, p. 317.

*Napothera atricapilla* Müll. MS. in Mus. Lugd.; Bp. Consp. I, p. 359 (1850); Blyth, Ibis 1865, p. 47.

*Setaria affinis* Salvad. Ucc. Born. p. 231 (1884); Sharpe, Ibis 1879, p. 258.

*Malacopteron affine* Sharpe, Cat. B. VII, p. 569 (1883); Everett, Journ. Straits Branch R. As. Soc. 1889, p. 106; Sharpe, Ibis 1894, p. 542.

Hab. Malay Peninsula, Sumatra, Banka, Java, Borneo and South Celebes.

Numerous specimens from Borneo, one from Java, one from Banka and one from Macassar (Teysmann). The Javan as well as the Macassar specimen are exactly similar to

those from Banka and Borneo. A young specimen with rufous wings has the cap olive like the back instead of sooty brown.

8. *Malacopteron kalulongae*.

*Turdinus kalulongae* Sharpe, Bull. Br. Orn. Club, N°. X, p. 54 (1893); id. Ibis 1893, pp. 548 and 568; id. id. 1894, p. 542.

Hab. The Mountain regions of Sarawak and Central Borneo.

Two specimens in the Leyden Museum, collected by myself during the recent Dutch scientific expedition to Central Borneo. One of these specimens, obtained on Mount Kenepai, fully agrees with the description of the types, but the other, collected on the Liang Koeboeng, has throat and chest distinctly striated with gray.

9. *Malacopteron melanocephalum*.

*Malacopteron melanocephalum* Davison, Ibis 1892, p. 101.

Hab. Malay Peninsula.

The bird described by Davison under this name is certainly not, as the author wrongly suggests, »most closely allied to *M. albigulare* (*Ophrydornis albigularis* of the present paper), but probably a true *Malacopteron*, having the tail fully three times as long as the tarsus and wanting the very characteristic eyebrow of *Ophrydornis*. It seems to be closely allied to the preceding species.

Leyden Museum, June 1895.

## NOTE XV.

NEUE GRABWESPEN AUS DER SAMMLUNG DES  
LEIDENER MUSEUMS

beschrieben von

**ANTON HANDLIRSCH.**

Durch die Güte der Herren Director Dr. F. A. Jentink und Conservator C. Ritsema erhielt ich anlässlich einer monographischen Arbeit das reiche Nyssoniden- und Bembecidenmaterial des Leidener Museums zur Revision zugeschickt. Unter den vielen interessanten Arten dieser Sammlung befinden sich auch 5 für die Wissenschaft neue, deren Beschreibungen ich hiemit der Öffentlichkeit übergebe.

*Gorytes tener*, n. sp.

♀. Kopf von oben gesehen nicht ganz doppelt so breit als lang. Augen gross und nach unten convergent. Vorder- und Seitenrand des Clipeus deutlich deprimirt. Fühler zierlich, schwach keulenförmig; ihr 3. Glied etwas länger als das vierte. Vordere Naht des Scutellum ohne Grübchen. Episternum des Mesothorax gut begrenzt, das Epimerum aber mit dem Sternum fast ganz verschmolzen. Sternum ohne Längskiel. Seiten des Mittelsegmentes nicht getheilt, das Mittelfeld schmal und beinahe bis zur Spitze längsrunzelig. Die 1. Cubitalzelle der Vorderflügel nimmt die 1. Discoidalquerader auf, während die 2. Discoidalquerader in normaler Weise in die 2. Cubitalzelle mündet. Analzelle der Hinterflügel sehr kurz, weit vor dem Ursprung des Cubitus geschlossen. Tibien stark bedornt; Tarsen nicht länger als gewöhnlich, der

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Metatarsus der Mittelbeine gekrümmt; Pulvillen deutlich, Cilien der Vordertarsen sehr kurz. 1. Hinterleibssegment fast verkehrt kegelförmig, am Ende kaum eingezogen und nur wenig länger als breit. 2. Ventralplatte gleichmässig gewölbt. Mittelfeld der sechsten Dorsalplatte ziemlich gross und dicht nadelrissig punktirt. Körper schwach metallisch glänzend, spärlich und ziemlich fein punktirt, deutlich behaart. Clipeus, Rand des Pronotum, Schulterbeulen, Binde am Metanotum und schmale wellige Binden der 2., 3. und 4. Dorsalplatte gelb. Fühler schwarzbraun, ihr Schaft unten gelb, die Geissel gegen die Basis an röthlichgelb. Beine schwarzbraun, die vorderen Schienen und Tarsen lichter, die Vorder- und Mittelschenkel aussen gelb gefleckt. — 7 mm.

*Hab.* Caracas (van Lausberge).

Alle wesentlichen Charaktere verweisen diese Art in die Gruppe des *bipunctatus* und *aeneus*. Die Schläfen sind stark entwickelt, die Ocellen nicht in Grübchen versenkt. Stirnstrieme verwischt. Punktirung des Dorsulum weitläufig und ziemlich fein.

*Gorytes Jentinki*, n. sp.

♀. Stirne breit. Augen nach unten nicht convergent. Fühler ziemlich dünn und kurz, ihre Geissel kaum keulenförmig. Thorax kurz und robust. Vordere Naht des Scutellum grubig. Mesosternum mit Längs- und Querkiel. Epimerum undeutlich-, Episternum gar nicht abgegrenzt. Mittelsegment mit ziemlich kleinem Mittelfelde, in welchem circa 10 Längsrünzeln verlaufen, und ungetheilten Seiten. Flügel schwach beraucht, mit gelbem Geäder und Stigma und dunkler Wolke, welche die Radialzelle und den oberen Theil der 2. und 3. Cubitalzelle bedeckt. Analzelle der Hinterflügel bis zum Ursprunge des Cubitus reichend. Beine von normaler Form, mit deutlich bedornten Schienen, lang bewimperten Vordertarsen und deutlichen Pulvillen. 1. Hinterleibssegment ziemlich kurz und schmal, fast wie bei den mit *G. cayennensis* näher verwandten Arten gebaut. Das 2. Segment an der Basis stark verschmälert und in

der hinteren Partie sehr convex, fast halbkugelig. 6. Dorsalplatte mit dicht punktirtem, breit lanzettförmigem Mittelfelde. Thorax grob und ziemlich dicht punktirt, das Mittelsegment sehr dicht, der Kopf mittelmässig und die Dorsalplatten an der Basis feiner, dem Ende zu gröber punktirt. Der ganze Körper ist dicht tomentirt, grösstentheils dunkel rostbraun; der Kopf, die Brust, ein Mittelfleck des Dorsulum, das Schildchen, Metanotum, Mittelfeld des Medialsegmentes und die Basis der Hinterleibsringe sind schwarz, der Clipeus braun, die Augenränder gelb. Beine mehr oder weniger dunkel rostroth, gegen die Basis zu schwärzlich. Fühler braun, ihr Schaft unten lichter. — 9 mm.

*Hab.* Timor (Wienecke).

Diese Art gehört in die nähere Verwandtschaft des *G. punctatus* und scheint sogar in dieselbe Gruppe zu gehören.

*Sphecius malayanus*, n. sp.

♀. Von der Gestalt des *Sph. speciosus* und *Grandidieri*. Thorax deutlich länger als breit. Episternum des Mesothorax mit dem Sternum verschmolzen, Epimerum gut begrenzt. Mittelsegment sehr abschüssig, sein Mittelfeld mit deutlicher Längsfurche. Flügel gross, stark gelb tingirt, mit braunem Geäder. Radialzelle sehr lang. Analzelle der Hinterflügel weit hinter dem Ursprunge des Cubitus endend. Beine sehr lang und kräftig, mit stark bedornen Schienen und Tarsen. Hinterleib wie bei *Sph. speciosus*, minder gedrunken als bei den palaearctischen Arten. 2. Ventralplatte entschieden gewölbt, 6. Dorsalplatte mit breit dreieckigem, dicht und grob punktirtem Mittelfelde. Punktirung des Körpers dicht, gleichmässig und ziemlich fein. Gesicht silberglänzend. Thorax dicht und kurz schwarzbraun behaart. Kopf schwarz, Augenränder, Clipeus und Oberlippe dunkel braunroth. Thorax schwarz. Hinterleib rostbraun, an der Basis des 1. und manchmal auch des 2. Segmentes schwarz. Fühler rothgelb. Beine schwarz mit dunkel rostrothen Schienen und Tarsen. — 25—30 mm.

*Hab.* Timor (Macklot und Wienecke), Sumbawa (van Lausberge).

Diese Art dürfte wohl dem madagassischen *Sph. Grandidieri* am nächsten stehen.

*Monedula maccus*, n. sp.

♀. Mit *M. carbonaria* nahe verwandt und in Bezug auf die Färbung den Arten *volucris*, *pantherina* und *lineata* am ähnlichsten. Sculptur des Dorsulum und Scutellum fast ganz wie bei *carbonaria*. Schwarz: Augenränder, Clipeus mit Ausnahme von 2 grossen Basalflecken, Seiten der Oberlippe, Mandibeln mit Ausnahme der Spitze, Rand des Pronotum, Schulterbeulen, grosse Flecken an den Seiten des Prothorax, breite Binde des Scutellum und Metanotum, geschwungene breite Binde und Flecken an den Seiten und Ecken des Mittelsegmentes, grössere laterale und kleinere isolirte discale Flecken der 4 ersten Dorsalplatten, grosse Seitenflecken der 5., und kleine Seitenflecken der 2.—4. Bauchplatte gelb. Fühler schwarz, ihr Schaft unten gelb. Beine schwarz mit einigen kleinen lichten Flecken am Ende der Schenkel und Linien an den Vorderschienen und Tarsen. Flügel fast glashell. — 22—25 mm.

*Hab.* Cordova: Argentinien (Weyenbergh und Dohrn).

*Stizus Ritsemae*, n. sp.

♀. Mit *St. ruficornis* verwandt. Flügel stark gelb tingirt, in der Radialgegend sehr deutlich beraucht. 1. Cubitalquader fast gerade. Gesicht fast ganz wie bei der genannten Art. Schildchen in der Mitte mit einem deutlichen behaarten Grübchen. 6. Dorsalsegment am Ende ziemlich breit abgerundet und deutlich gerandet. Kopf und Thorax deutlich, blass behaart, das Gesicht silberglänzend. Sculptur des Thoraxrückens fast wie bei *ruficornis*. Rostroth: Gesicht und grosse eckige Seitenflecken der ersten 5 Dorsalplatten citronengelb. Beine und Fühler rostroth. — 25 mm.

*Hab.* St. George d'Elmina: West Afrika (Nagtglas).

Diese Art ist durch ihre prächtige Färbung so ausgezeichnet, dass jede Verwechslung ausgeschlossen erscheint.

Wien, Juni 1895.

## NOTE XVI.

## REMARKS ON HEMICHROMIS FASCIATUS PETERS

BY

**Dr. C. L. REUVENS.**

Among a collection of fishes, sent by Mr. Jackson Demery from Liberia, were 11 examples which, at first sight, seemed to me to agree with *Hemichromis fasciatus* Peters. A careful examination led me to give some remarks on the characters of this species, which will make the determination more easy, and contribute to resolve the question: do the examples of *Hemichromis fasciatus*, till now described by the authors, belong to one and the same well-defined species.

The material of *Hemichromis fasciatus* now in the Leyden Museum, including the 11 above mentioned specimens, consists of a number of 28 examples, namely:

- a. N°. 2278. 3 spec., length 80, 115 and 125 mM. Dabocrom. Pel coll., 1850.
- b. N°. 2019. 1 spec., length 140 mM. Ashantee. Pel coll.
- c. N°. 2277. 1 spec., length 177 mM. Gold Coast. Pel coll.
- d. N°. 5224. 10 spec., length 55—83 mM. Robertsport, Grand Cape Mount River, Liberia. Demery coll., July 1<sup>st</sup>, 1891.
- e. N°. 5230. 1 spec., length 75 mM. Hill Town, Du Queah River, Liberia. Büttikofer and Stampfli coll., 1887.
- f. N°. 5225. 4 spec., length 70—165 mM. Sforé Place,

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St. Paul's River, Liberia. Büttikofer and Sala coll., 1880.

- g. N°. 5226. 2 spec., length 150 and 195 mM. Farmington River, Liberia. Stampfli coll., 1887.
- h. N°. 5227. 1 spec., length 202 mM. Junk River, Liberia. Stampfli coll., 1884.
- i. N°. 5228. 2 spec., length 87 and 120 mM. Robertsport, Grand Cape Mount River, Liberia. Büttikofer and Sala coll., 1881.
- k. N°. 5229. 3 spec., length 32, 33 and 60 mM. Mahfa River, Liberia. Demery coll., 1889.

The literature about this matter consists of:

- Peters, Monatsber. Kön. Preuss. Ak. Wiss., 1857, p. 403.
- Gill, On the West-African genus *Hemichromis*, Proc. Acad. Nat. Sciences Philad., 1862, p. 134.
- Günther, Cat. of Fishes, T. IV, p. 274.
- Bleeker, Mémoire sur les Poissons de la Côte de Guinée, Nat. Verh. Holl. Maatsch. Wet. Haarlem, 1863, p. 38, pl. V, fig. 1.
- Steindachner, Zur Fischfauna des Senegal, SB. Akad. Wien. Math. Naturw. Cl. Bd. LX, 1869, p. 970.
- Sauvage, Faune ichth. de l'Ogôoué, Nouv. Arch. du Museum, Ser. II, T. III, 1880, p. 35.
- Rochebrune, Faune de la Sénégambie, Actes d.l. Soc. Linn. Bordeaux, 1882, pp. 135 et 136.
- Perugia, Intorno ad alcuni pesci raccolti al Congo, Ann. Mus. Civ. Stor. Nat. Genova, T. XXX, 1890—91, p. 971.
- Steindachner, Die Fische Liberia's, Notes Leyd. Mus., vol. XVI, 1894, p. 47.

The description given by Peters mentions: »dorso fuscoviridis, lateribus abdomineque argenteus, fasciis transversis fuscis sex, macula operculari nigra; pinna dorsali et anali oblique fasciatis, albomarginatis; pinna caudali supra infraque albomarginata; pinnis ventralibus externe fuscis. Dentes medii duo superiores longiores, inferiores medii quatuor breviores.

D.  $\frac{14}{12}$  ( $\frac{14}{11}$ ), A.  $\frac{3}{10}$  ( $\frac{3}{9}$ ), Lin. lat. 28.  
Africa occidentalis, Guinea. Pel coll." 1)

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1) All the fishes sent by Pel to the Leyden Museum about the year 1850,



Before mentioning the conclusions I made after the study of the literature, after the informations which came in from other Musea, and after the material in the Leyden Museum, I will complete Peters' description.

Prof. Hilgendorf at Berlin wrote to me, after examination of the type-specimens, that as the sixth transverse band is to understand the darker part above and below the middle of the eye; the number of transverse bands on the body is consequently five.

The principal characteristics of *Hemichromis fasciatus* are after Peters:

- 1°. Five transverse dark bands on the body (the 6th across the eye).
- 2°. A dark, bluish-black spot on the operculum.
- 3°. Both corners of the caudal fin white.
- 4°. Dorsal and anal fin with oblique dark and light streaks, both with a white border, especially the dorsal fin.

I add: 5°. Dorsal and anal fin sharply pointed, the middle soft rays produced into short filaments.

I will now proceed to give a short review of what is said in literature:

Gill (1862) only repeats the description of Peters.

Günther (1862), enumerating two specimens from West Africa, says: »five or six blackish cross-bands; each scale below the lateral line with a dark vertical streak." White edges of the caudal fin are not mentioned.

Bleeker (1863) describes the 5 specimens collected by Pel; he states that there are 5 cross-bands, white corners to the tail and »squamis mediis lateribus supra axillaribus et interfascialibus aetate provectis singulis basi macula

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were collected at the Gold Coast and Ashantee, and Prof. Peters received from the series of *Hemichromis*-specimens two examples; the other 5 remained in Leyden. These five have been described by Bleeker, whilst the drawing he gives of *Hemichr. fasciatus* shows a combination of characters, not to be found in one and the same individual.

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fusco-violacea." As I said above, we find in none of the here mentioned specimens the white corners to the tail combined with the black centres of the scales.

Steindachner (1869) says that the cross-bands may sometimes disappear, or be changed in dark spots; further: »auf jeder Schuppe liegt ein kleiner schwarzgrauer Fleck. Oberer Rand der Dorsale und obere Ecke der Caudale rosenroth." The author had a material of 20 specimens, and none of them, as I may conclude from the description, showed both corners (lower as well as upper) of the caudal fin »rosenroth".<sup>1)</sup> All specimens were captured in the Senegal River.

Sauvage (1880) says nothing about the coloration of the tail, fins or scales. The specimen he describes is from the Gaboon River.

Rochebrune (1882) asserts that the description of Bleeker is not exact. As however the coloration of his specimens is as little corresponding with that of the specimens described by Peters, Günther and Steindachner, I suppose his fishes did not belong to *Hemichromis fasciatus*.

Perugia (1890—91) says that the small specimens he describes want the black spot on the operculum, but, for the rest, correspond with the diagnosis of Peters. — Congo River.

Steindachner (1894) says: »5 dunkle Querbinden am Rumpfe . . . . . auf den 4—5 mittleren Längsschuppenreihen des Rumpfes liegt auf jeder Schuppe zwischen den Querbinden ein ziemlich grosser, intensiv brauner Fleck. Viel schwächer der Grösse und Tiefe der Färbung nach sind die braunen Flecken auf den übrigen Schuppenreihen bis zur Rückenlinie hinauf entwickelt. Der dunkle Fleck am Kiemendeckel . . . . . fehlt aber bei ganz jungen Exemplaren." — Liberia.

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1) Steindachner made his annotations after fresh fishes; in spirits rose-colour becomes white.

About the material in other Musea I got the following informations:

Prof. Hilgendorf at Berlin gave me, amongst other ones, these remarks about the two type-specimens: »5 Querbinden; weissliche Einfassung der Caudalis, oben und unten in ihren hinteren Drittel, ist sehr deutlich; zwischen den Querbinden sind die Schuppen nicht durch Basisflecken ausgezeichnet, wie ich es an anderen Exemplaren von Liberia und Lagos sehe.»

Prof. Vaillant at Paris wrote to me, that he did not observe white corners at the caudalis; on the sides of the body he found 5 cross-bands. — Franceville, Upper Ogowe.

As the caudal fin of the single specimen in the Museum at Genoa is in bad condition, no informations about its coloration could be given; 5 cross-bands on the body. — Congo River.

Mr. Boulenger of the British Museum wrote to me: »I may state that in *Hemichr. fasciatus* the white edge at the corners of the caudal coexists with the dark vertical streak on the side-scales below the lateral line, in specimens examined by Dr. Günther (see Cat. of Fishes) as well as in others received more recently.»

From the examination of the material, now in the Leyden Museum, follows that:

1°. 3 specimens (see *a* of the enumeration, p. 111) correspond in every characteristic with the type-specimens of Peters.

2°. 25 specimens (see *b—k* of the enumeration, pp. 111 and 112) have only the upper corner of the caudalis white and the centre of side-scales black.

So we see that, after the authors and the various Museum-material, the following short diagnoses of *Hemichromis fasciatus* and its varieties can be given:

*Hemichromis fasciatus* Peters. The edge of the lower and upper corners of caudalis white, and the centre of side-scales below the lateral line without a black centre. — Two type-

specimens in the Berlin-, three co-types in the Leyden Museum.

Hab. Gold Coast and Congo.

Var.  $\alpha$ . A very constant variety, when not a distinct species. Only the upper corner of caudalis with a white edge, side-scales below the lateral line with a black centre. — Many specimens in the Musea at Vienna and at Leyden.

Hab. Senegal, Liberia and Gold Coast.

Var.  $\beta$ . The edge of both corners of caudalis white, and the side-scales below the lateral line with a black centre. — British Museum.

Hab. West Africa.

Var.  $\gamma$ . Caudalis uniformly coloured, without white edges to the corners. — Paris Museum.

Hab. Upper Ogowe.

Leyden Museum, July 1895.

## NOTE XVII.

## NOTICE SUR LES LÉPIDOPTÈRES DES ÎLES NATUNA

PAR

**P. C. T. SNELLEN.**

Mr. Ritsema, Conservateur de la collection d'Insectes du Musée de Leyde, ayant reçu quelques Lépidoptères que Mr. A. L. van Hasselt, Résident de Riouw et de ses dépendances, avait recueillis aux îles Natuna, me pria d'en dresser la liste, parce que jusqu'ici rien n'avait été publié sur les insectes de cet ordre, habitant ces îles. J'ai saisi avec empressement l'occasion de m'instruire sur la faune lépidoptérologique d'une région presque inconnue et je remercie Mr. Ritsema bien vivement de me l'avoir fournie.

Les îles Natuna sont situées dans le golfe de Chine, entre la presqu'île de Malacca, la grande île de Bornéo et l'Annam. C'est de Bornéo qu'elles sont le plus rapprochées et elles consistent dans une grande île, Grand-Natuna, et plusieurs petites. Le groupe fait d'ailleurs partie des possessions Néerlandaises.

La collection contenait seulement 31 espèces, dont 3 Hétérocères, et certainement il reste encore bien de Diurnes à découvrir. Cependant je crois déjà pouvoir dire que la faune lépidoptérologique a beaucoup d'affinité avec celle de Malacca, dont les Rhopalocères nous sont assez bien connus par l'ouvrage consciencieux de Mr. Distant (*Rhopalocera Malayana*) et avec celle l'île de Sumatra, plus qu'avec celle de Bornéo et assez peu avec celle de Java. On observe aussi quelques affinités avec la faune des îles Philippines.

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Je n'ai pas trouvé d'espèces inédites et seulement une variété locale bien caractérisée, appartenant à la *Hestia Leuconoë* Erichs. De plus, les exemplaires du *Papilio Aristolochiae* ne sont pas dépourvus d'intérêt.

1. *Euploea Climena* Cramer, Uitl. Kap. IV, p. 207, pl. 389, figs. E, F.

Var. *sepulchralis* Butler, Proc. Zool. Soc. of London, 1866, p. 282, fig. 2, ♂. — Snellen, Tijdschr. v. Ent. 34, p. 231.

Deux mâles, conformes aux exemplaires ordinaires de Java. Ils n'ont pas d'éclaircie blanchâtre à l'angle anal des ailes postérieures, ni traces d'écailles blanches vers le sommet des ailes antérieures. Mr. Distant ne mentionne pas cette espèce de Malacca.

2. *Euploea Crameri* Lucas, Revue Zool. 1853, p. 318, ♂.

Une femelle à dessins blancs très-raréfiés; le sommet des ailes antérieures en est dépourvu et leur milieu n'offre que quelques petits traits. Par contre, la rangée marginale de points blancs des ailes postérieures est assez complète, quoique les points sont assez petits, mais il n'y a pas de rangée submarginale.

3. *Euploea Midamus* Linné. — Distant, Rhop. Mal. p. 24, pl. 2, figs. 8, 9.

*Trepsichrois Linnaei* Moore, Proc. Zool. Soc. of London, 1883, p. 286.

Deux mâles et une femelle; ils sont conformes aux exemplaires de Malacca et de Sumatra et se distinguent donc aussi bien de ceux de Bornéo, à points clairs, petits et rares (*Mulciber* Dist. l. c. pl. 3, figs. 1, 2), que des individus Javanais à points blancs gros et nombreux (*Claudia* Fabr., *Midamus* Sulzer, Abgek. Gesch. d. Ins. pl. 16, fig. 4, 5, ♂♀).

4. *Euploea Mazares* Moore, Cat. Lep. East-India Comp. I, p. 127, n°. 253 (1857). — Snellen, Tijdschr. v. Ent. 34, p. 232.

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*Calleeploea Aristoteles* Moore, Proc. Soc. Zool. of London, 1883, p. 292.

*Euploea Mazares* var. *Aristoteles* Staud., Iris, 1889, p. 22.

Quatre mâles. Ils se distinguent à peine des exemplaires typiques de Java, ce qui est aussi le cas avec l'*Aristoteles* de Mr. Moore.

5. *Euploea Radamanthus* Fabr., Ent. Syst. 3, p. 42, ♂.  
*Euploea Diocletianus* Distant, Rhop. Mal. p. 28, pl. 4, figs. 4, 5, ♂♀.

Deux mâles; ils sont conformes aux individus de Malacca et de Sumatra que figure Mr. Distant, aussi en ce qui regarde la longueur des raies blanches le long du bord intérieur des secondes ailes et diffèrent ainsi visiblement de ceux de l'île de Bornéo.

6. *Euploea Chloë* Guérin, Voyage de Delessert, II, p. 71. — Distant, Rhop. Mal. p. 30, pl. 4, fig. 2, ♂; pl. 2, fig. 5, ♀.

Une femelle. *Chloë* Guérin n'est probablement qu'une variété légère de *superba* Herbst, Naturg. der Insecten, VI, pl. 102, figs. 1, 2.

7. *Hestia Leuconoë* Erichson, Nova acta Acad. Nat. Curios. 16, p. 283. — Doubleday and Hewitson, Gen. Diurn. Lep. pl. 13, fig. 2. — Semper, Schmett. d. Philipp. I, p. 6 et p. 320, pl. I, figs. 3, 4, ♂, fig. 5, ♀. — Distant, Rhop. Mal. p. 406, pl. 39, fig. 3.

Sept exemplaires des deux sexes. Ils constituent une variété locale (*natunensis* m.), se distinguant du type, qu'on trouve aux Iles Philippines, aux Iles Talaut, dans le nord de Bornéo, à Riouw et à Malacca, par le manque absolu d'une teinte jaune sur la moitié basale des ailes. En outre, la couleur du fond est décidément plus claire que chez le type.

8. *Danaïs Juventa* Cramer, Uitl. Kap. II, p. 139, pl. 188, fig. B. — Distant, Rhop. Mal. p. 407, pl. 39, fig. 4.

Cinq exemplaires des deux sexes. La figure que donne Mr. Distant leur convient assez bien et ils ne diffèrent guère du type.

9. *Danais Melanippus* Cramer, Uitl. Kap. II, p. 44, pl. 127, figs. A, B.

Un mâle, appartenant à la variété *Hegesippus* Cram. (l. c. p. 128, pl. 180, fig. A) qui remplace le type à Malacca et à Sumatra.

10. *Cyllo Leda* Linné.

*Melonitis Ismene* Distant, Rhop. Mal. p. 42, figs. 9, 11, 12.

Deux mauvais exemplaires femelles. La figure 11 de Mr. Distant leur convient très-bien.

11. *Ipthima Pandocus* Moore, Cat. Lep. East-India Comp. I, p. 235, n°. 506 (1857).

Deux mâles bien conformes au type qui fut décrit de Java par Mr. Moore.

12. *Mycalesis Hesione* Cramer, Uitl. Kap. I, p. 16, pl. 11, figs. C, D. — Snellen, Tijdschr. v. Ent. 33, p. 287.

*Mycalesis Medus* Fabr., Distant, Rhop. Mal. p. 40, pl. 4, fig. 8.

Deux femelles; elles ressemblent plutôt aux exemplaires de Belitoeng qu'à ceux de Java; la différence entre les individus de ces deux îles est d'ailleurs à peine sensible.

13. *Cethosia Hypsea* Doubleday, Gen. Diurn. Lep. pl. 20, fig. 4. — Staudinger, Iris, 2, p. 44.

*Cethosia Hypsina* Distant, Rhop. Mal. p. 172, pl. 8, figs. 6, 7, ♂; fig. 8, ♀.

Un mâle. Il est identique aux exemplaires de Malacca, comme Mr. Distant les figure.

14. *Atella Phalanta* Drury, Illustr. Ex. Ent. I, pl. 21, figs. 1, 2

Un mâle de cette espèce très-répandue et qui ne varie guère en Asie.

15. *Atella Alcippe* Cramer, Uitl. Kap. IV, p. 207, pl.

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389, figs. G, H. — Distant, Rhop. Mal. p. 174, fig. 46, ♂.

Un mâle, bien identique aux exemplaires de Malacca et de Sumatra comme les représente la figure que donne Mr. Distant et dont les dessins noirs, surtout du dessous, sont bien plus fins que chez les individus des Moluques, que figure Cramer. Je ne connais pas cette espèce de Java.

16. *Cirrochroa Bajadeta* Moore, Cat. Lep. East-India Comp. I, p. 150, n°. 309, pl. 3<sup>a</sup>, fig. 3 (1857). — Distant, Rhop. Mal. p. 179, pl. 19, figs. 1, 2, ♂♀. Un mâle; il ne diffère pas des exemplaires de Malacca. La figure que donne Mr. Distant est trop terne.

17. *Precis Ida* Cramer, Uitl. Kap. I, p. 66, pl. 42, figs. C, D; IV, p. 167, pl. 374, figs. C, D.

Trois exemplaires qui sont assez mauvais; pour cette raison je m'abstiens de les comparer à ceux d'autres localités.

18. *Miletus Boisduvalii* Moore, Cat. Lep. East-India Comp. I, p. 19, n°. 2, pl. 1<sup>a</sup>, fig. 1 (1857).

Une femelle. La bande blanche des ailes antérieures est large et ininterrompue; chez les exemplaires de Java elle est toujours plus étroite et rarement entière.

19. *Lycaena Elna* Hewitson, Exot. Butt. V, Lyc. pl. 1, fig. 8.

*Castalius Elna* Distant, Rhop. Mal. p. 217, pl. 20, fig. 4.

Une femelle. Les deux figures que je cite sont très-peu soignées, mais je n'en connais pas d'autre.

20. *Lycaena Aratus* Cramer, Uitl. Kap. IV, p. 144, pl. 365, figs. A, B.

Un mâle. Cette espèce, dont Mr. Kirby n'indique pas la patrie dans son Catalogue, est assez répandue. Je la connais des Moluques, de Célèbes, Timor, Bornéo, Belitoeng et Tanah-Djampea. La figure de Cramer est bien grossière.

21. *Lycaena Pandava* Horsfield, Cat. Lep. East-India Comp. p. 84 (1829). — Moore, Lepid. of Ceylon, p. 92, pl. 37, figs. 1, 1<sup>a</sup>, 1<sup>b</sup>.  
Un exemplaire mâle mutilé.
22. *Pieris Lea* Doubleday, Ann. of Nat. Hist. XVII, p. 23 (1846). — Snell. v. Voll., Mon. des Piér. p. 23.  
*Pieris Clemanthe* Doubleday, Gen. Diurn. Lep. pl. 6, fig. 3.  
*Appias Amalia* Distant, Rhop. Mal. p. 314, pl. 33, fig. 1.  
*Appias Andersoni* Distant, id. p. 315, pl. 33, fig. 2.  
Trois paires. Les femelles très-mauvaises, mais deux des mâles assez bons. Ces derniers sont intermédiaires entre *Amalia* Dist. et *Andersoni* Dist., ce qui me prouve que la dernière n'est qu'une petite variété plus semée d'écailles foncées sur le dessous des ailes postérieures. Cette espèce se trouve aussi dans l'île de Sumatra mais pas à Java.
23. *Callidryas Chryseis* Drury, Illustr. Ex. Ent. I, pl. 12, figs. 3, 4. — Butler, Exot. Lep. I, p. 35, pl. 15, figs. 4—7.  
*Papilio Aleyone* Cramer, Uitl. Kap. I, p. 89, pl. 58, figs. A—C.  
Un mâle de cette espèce qui varie peu et est assez répandue.
24. *Terias Hecabe* Linné. — Snell. v. Voll., Mon. des Piér. p. 66.  
Trois exemplaires de cette espèce commune. Un mâle, appartenant au type (Distant, Rhop. Mal. pl. 26, fig. 19), une femelle entre le type et la variété A de Mr. Snellen van Vollenhoven, et un mâle de la variété *Blanda* Boisd. (Spécies Général, p. 672). Ces variétés se trouvent presque partout avec le type.
25. *Papilio Sarpedon* Linné. — Boisduval, Spéc. Gén. I, p. 235. — Distant, Rhop. Mal. p. 359, pl. 32, fig. 6.

Quatre exemplaires. Ils sont assez grands (envergure 64—72 mm.) et d'ailleurs parfaitement conformes à la figure que Mr. Distant donne de cette espèce.

26. *Papilio Amphrysus* Cramer, Uitl. Kap. III, p. 43, pl. 219, fig. A, ♂.

*Ornithoptera Amphrissus* Boisd., Spéc. Gén. I, p. 178, pl. 5, fig. 1.

*Ornithoptera ruficollis* Dist., Rhop. Mal. p. 328 c. fig. 107, ♀; pl. 27, fig. 1, ♂; pl. 27<sup>a</sup>, fig. 1, ♀ var.

Une grande femelle (165 mm. d'envergure) à dessins noirs confluent sur la seconde moitié des ailes postérieures. De tels exemplaires ne sont pas rares.

27. *Papilio Aristolochiae* Fabricius, Syst. Ent. p. 443. — Distant, Rhop. Mal. p. 387, pl. 31, figs. 6, 7.

*Papilio Polidorus* Cramer, Uitl. Kap. II, p. 45, pl. 128, figs. A, B.

*Papilio Polydorus* Boisd., Spéc. Gén. I, p. 267. — de Haan, Verh. Nat. Gesch. Ned. bezitt. p. 38, pl. 8, fig. 1.

Quatre femelles. Elles diffèrent du type par l'absence de la couleur rouge au bord abdominal des ailes postérieures, par la couleur d'un gris sale des taches le long du bord postérieur de ces mêmes ailes. En dessous, les taches marginales et celles de la cellule 1<sup>b</sup> au milieu du bord abdominal sont d'un jaune ochracé sale, un peu rougeâtre, de même que les dessins clairs du ventre. Je suis d'avis qu'ils forment une transition du type à la variété *Annae* Felder (Reise der Novara, I, p. 132, pl. 20, fig. C.—Semper, Schmett. der Philipp. I, p. 271, pl. 46, fig. 2).

28. *Papilio Memnon* Linné. — Boisduval, Spéc. Gén. I, p. 192.

Un mâle. Les taches rouges du dessous à la base des ailes sont assez petites.

29. *Syntomis biplagata* Snell. v. Voll. in litt. — Snellen, Midden-Sumatra, Lepidoptera, p. 33, pl. 3, fig. 10.

Une femelle.

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30. *Glaucopis Horsfieldii* Moore, Cat. Lep. East-India Comp. II, p. 328, n°. 773; pl. 14, figs. 9, 9<sup>a</sup> (chenille et cocon) (1859).

Un exemplaire. Les dessins jaunes sont un peu plus étendus que chez le type, et il y a en outre une tache jaune additionnelle dans la cellule 2 des ailes antérieures, reliant la tache allongée de la cellule 1<sup>b</sup> à la bande transversale qui occupe la base des cellules 3—6.

31. *Nyctemera leucospilota* Moore, Proc. Zool. Soc. of London, 1877, p. 599, pl. 59, fig. 7.

Un mâle; il est d'une taille assez petite (34 mm.), mais d'ailleurs conforme à un exemplaire que je tiens de Mr. Moore lui-même. Cette espèce vient très-près de la *Nyctemera maculosa*(sum) Felder, Novara, II, pl. 103, fig. 2.

Rotterdam, Juin 1895.

## NOTE XVIII.

## CONTRIBUTION TO THE LUCANOID FAUNA OF JAVA

BY

J. R. H. NEERVOORT VAN DE POLL.

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*Prosopocoelus javanensis* v. d. Poll.

This species, of which a single male of the forma maxima is before us, although very closely allied to *P. cavifrons* Hope<sup>1)</sup> from the Philippines and to *P. patricius* Schauf. from Celebes, might be at once separated from both by the front-margin of the head, being without the crestlike elevation which in the above cited allied species is already quite obvious in specimens of median development; moreover the dentition of the mandibles is different.

The mandibles of *javanensis* are longer than the head and thorax taken together, flattened, very slightly incurved for about the basal three fifth of their length, almost straight for the following fifth, thence gently bent inwards in an oblique direction; armed with a very large blunt dentiform process at the base, a large obtuse tooth somewhat higher up, a series of five small blunt contiguous teeth along the straight portion at four fifth of their length, and finally a rather large tooth at some distance from the pointed tip, forming with the latter a terminal fork.

The mandibles of *cavifrons* Hope are rather straighter, the ante-basal tooth is wanting, and they have instead of the series of small teeth only a single very large pointed tooth.

Of *patricius* Schauf. we have specimens of median development only, but in the description the mandibles of

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1) It is to the forma media of *P. cavifrons* Hope that *P. ebeninus* Albers must be referred.

the forma maxima are said to have a short valid basal tooth, in the middle on the right mandible a long pointed tooth and on the left an obtuse one, finally before the tip some small teeth, separated by an emargination from some other faint denticulations.

Length: 45 mm.

*Hab.* Lawang, Pasaroean Residency (Holz).

*Aegus pengalenganus* v. d. Poll.

Black, subnitid. Mandibles about of the length of the head, gently curved, armed at the base with a large blunt tooth directed somewhat obliquely backwards when they are closed; compressed between the tip and the basal tooth, the inner-upper-margin angularly swollen before the middle which seems to indicate the existence of a tooth in higher developed individuals.

Head with the front-margin slightly concave and provided with two rather large and very distant tubercles; outer margin of the ocular canthus entire, post-ocular process very large, projecting but obtuse; between the eyes and the base of the mandibles there is a somewhat swollen space; finely and not very closely punctured, the punctures becoming much larger near and behind the eyes.

Prothorax not quite twice as broad as long, with the sides almost parallel and passing insensibly into the basal margin on account of the broadly rounded hinder angles, anterior angles prominent and rounded; grooved along the margins, much more broadly so along the lateral ones, which are fringed with short pale bristles; uniformly and strongly punctured.

Elytra rather parallel for the greater part of their length, comparatively obtusely rounded at the tip, shoulders not much marked, obtuse; each elytron with seven deeply impressed striae of which the three outermost become gradually shallower and narrower, the interstices strongly punctured, the sides and the apical portion very closely and subrugosely punctured, all the punctures bearing very minute

pale scales, giving a somewhat velvety lustre in certain lights.

Undersurface shining, delicately and distantly punctured, more evidently along the sides and on the abdomen, the last ventral segment rather thickly punctate, the jugulum and mentum scattered with a few large pits. Tibiae and tarsi clothed with long soft flavous hairs, forder tibiae with three teeth before the terminal fork, intermediate tibiae with from one to three, posterior tibiae with a single spine on the outer edge.

The female has the frontal tubercles fused, forming a broad transverse process, slightly emarginate in the middle; the mandibles short and concave, very obtuse at the tip, with a very blunt enlargement in the middle; the thorax somewhat more narrowed towards the front-margin, the elytra slightly swelling out behind the middle; the upper-surface densely and rugosely punctured, more thickly clothed with pale bristles and consequently less brilliant, more of a velvety appearance; the mentum roughly punctured.

Length: ♂  $12\frac{1}{2}$ —14 mm., ♀ 11—12 mm.

*Hab.* Pengalengan, Preanger Residency (Fruhstorfer).

*Aegus preangerensis* v. d. Poll.

Black, subnitid. Mandibles valid, about of the length of the head, falcate, at the base with a strong process which is slightly emarginate at the tip.

Head moderately swollen, depressed in front in a transverse direction; the front-margin slightly emarginate, lobed at the base of the mandibles, and provided in the middle with two contiguous very blunt nodosities; ocular canthus rounded, forming an angle with the lobes of the front margin, post-ocular process large, strongly projecting, the tip broadly truncated; subopaque, quite inconspicuously punctured in front, more evidently on the disc, leaving a smooth space at the base, deeply pitted near and behind the eyes.

Prothorax much broader than long, the sides subparallel for two thirds of their length, thence deeply emar-

ginate before the angular hinder angles, the forder angles projecting and subtruncate; grooved along the margins, more broadly so along the lateral ones which are crenulate and beset with a few short pale hairs; the disc is somewhat depressed along the middle, strongly punctured all over, coarsest towards the sides. — In a less developed specimen this sculpture is much stronger, rather confluent and subrugose at the base and the sides.

Elytra with the shoulders slightly prominent, ending in a small blunt tooth; each with six well-marked striae and an indistinct seventh at the sides, the interstices plain and smooth posteriorly, finely punctured along the suture and towards the base where the punctures become gradually larger and confluent, the sides and the apical portion uniformly densely punctured and subpubescent. — In the minor development the elytral sculpture too is stronger and the glabrous space smaller.

Undersurface shining, distinctly but distantly punctured, the punctuation coarsest in front of the forder coxae, closest on the last ventral segment, all the punctures bearing soft short fulvous hairs; jugulum and mentum with a few large widely spread pits, forder tibiae with three teeth before the terminal fork, intermediate and posterior tibiae with a single spine on the outer edge.

The female has the mandibles acutely pointed at the tip, with a large bidentate process about the middle; the sculpture of the head is very coarse and unequal, showing along the front-margin, between the ante-ocular nodosities, a narrow streak which is less thickly punctured and consequently more shining; thorax and elytra uniformly and very coarsely punctured, undersurface more strongly punctate than in the male sex.

Length: ♂ 14—16 mm., ♀ 13—14 mm.

*Hab.* Pengaleugan and Mt. Tjikorai, Preanger Residency (Fruhstorfer).

Beukenstein-Museum, August 1895.



## NOTE XIX.

SOME REMARKS UPON CERTAIN SPECIES  
OF CORYPHOCERA

BY

J. R. H. NEERVOORT VAN DE POLL.

In a recent paper (Deutsche Ent. Zeitschr. 1895, Heft II, p. 281, not yet published) of which through the kindness of the author I received the other day a separate copy, Dr. Heller of the Dresden Museum describes under the name of *Heterorrhina Schadenbergi* a pretty new species of *Coryphocera* from Busuanga, a small island between Mindoro and Palawan.

*C. Schadenbergi* is allied much more closely to *C. versicolor* Jans. from Jolo island, which Dr. Heller has overlooked, than to any of the species with which he compares it.

I have had already for a few years a female *Coryphocera* from North-Palawan (Dr. Platen), which I regarded as belonging to *versicolor*. Not long ago I got also a male from South-Palawan and an other female from the small island Balabac (near the southern extremity of Palawan), both collected by Mr. Waterstradt, and as the above material happened to be not yet incorporated in the collection, the receipt of Dr. Heller's paper induced me to bring all my specimens together for a more close examination.

My Palawan and Balabac specimens agree well enough with the description and figures of *Schadenbergi*, however their elytral sculpture is less distinct and the dentiform

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prolongation of the reflexed front margin of the head looks less pointed, somewhat more truncated than in the Busuanga type. But on the other hand comparing the mentioned specimens with *versicolor*, the only peculiarities I am able to enumerate for the latter are the still more obsolete sculpture of the elytra, the broader and slightly emarginate frontal process, the brown colour of the antennae, the almost entire absence of black on the margins of the abdominal segments as also on the male ventral depression, and finally, the somewhat different shape of the black spots on the uppersurface.

Although the differences here recorded may look quite sufficient to differentiate both species conveniently, I feel almost sure the examination of a more extensive material (and if it may be from a still greater number of localities) will prove that we have to deal with local races of one and the same species. Even when taking material from a single locality, *Coryphoceras* frequently vary both in coloration and in sculpture, and very little strength may be laid on characteristics derived therefrom. The structure of the head and chiefly of the reflexed frontmargin of the clypeus, which I myself was inclined to consider a sure guide, happens to be a character as perfidious as the rest — among my large material of *C. Dohrni* Lansb. I have several specimens with the frontal process entire and broadly rounded instead of bilobed.

I thought it of interest at once to draw the attention to these Philippine species, which seem to indicate a series of local forms exactly like *decora* Ill., *imperatrix* Mohn. and *Dohrni* Lansb. It is worthy of notice that *C. imperatrix* Mohn. is confined (at least as far as present knowledge goes) to East-Java, whilst in West-Java an other form occurs, which very strongly resembles the Sumatran *C. decorata* Ill., only differing from it by the somewhat larger black spots and the more evidently punctured elytra.

It is to be regretted that Dr. Heller repeats the blunder made by Dr. Kraatz concerning the synonymy of *C. impe-*

*ratrrix* Mohn. and *dives* Westw. Dr. Kraatz simply overlooked that the female *Coryphocera* figured sub n<sup>o</sup> 6 on plate 33 of the *Arcana Entomologica* belongs to Westwood's description of *C. decora* Ill., and it is not even a revelation that the specimen there figured belongs to the Javanese race of *decora* Ill., afterwards separated by Mohnike under the name *imperatrix*, as Westwood himself informs us he has represented on the plate a magnificent specimen collected in Java by Dr. Horsfield; moreover it has been mentioned also by Ritsema in the publication of the Sumatra-Expedition. I shall not correct some minor inaccuracies contained in Dr. Kraatz' paper, I am very sorry indeed that the above rectification is not exactly in favour of his hypothesis that *C. Mac Leayi* Gory should be a *C. borneensis* Wall. with the head of *Diceros* (*Peteli*?). In order to show that such a strange phenomenon is not standing alone I will draw his attention to that puzzling female of *Heterorrhina mitrata* Wall., which also closely resembles *C. borneensis* Wall., were it not for its head having the same structure peculiar to the females of *Diceros*. Is it not rather funny this couple of *C. borneensis* Wall. with fancy-dress heads?

For my part I think it safer to consider *Mac Leayi* Gory as well as *mitrata* Wall. interesting connecting links between the genera *Coryphocera* and *Diceros*, combining the style of coloration of the first with the armature of the head of the second, and, if absolutely a conjecture must be made, let it be that both species under consideration really belong together as male and female, for the locality Philippine Islands of *Mac Leayi* Gory may be inaccurate as is so often the case with insects described in that period, and here it is the more probable as Gory mistook his species for *Mac Leayi* Kirby.

Beukenstein-Museum, August 1895.

## NOTE XX.

## SOME ADDITIONS TO THE CEYLONESE CETONIIDAE

BY

**J. R. H. NEERVOORT VAN DE POLL.**

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Dr. Kraatz has recently published (Deutsche Ent. Zeitschr. 1895, p. 110) a note on three species of Cetoniidae said to be from Ceylon and not contained in the paper I published some time ago in collaboration with Mr. Kannegieter. Of the species mentioned by Kraatz, viz: *Diceros confusa* Westw., *Anthracophora ceylonensis* Krtz. and *Cetonia rufocuprea* G. & P. (for which a new genus *Pseudanatona* is proposed), we also have the last named species. Moreover the following two species may now be added:

*Glycyphana tricolor* Oliv.

Several specimens from Wellawaya.

*Macroma nigripennis* Schaum.

Two male specimens taken near Colombo and constituting a variety with the scutellum, thorax and head (except the clypeus) entirely black.

Finally by an oversight, *Clinteria pantherina* Parry has been omitted from our list, for although we did not receive it from any direct source, there seems to be no reason to doubt the correctness of the habitat.

Beukenstein-Museum, September 1895.

NOTE XXI.

ZOOLOGICAL RESULTS OF THE DUTCH SCIENTIFIC  
EXPEDITION TO CENTRAL BORNEO <sup>1)</sup>.

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THE LUCANOID COLEOPTERA OF THE DUTCH  
SCIENTIFIC BORNEO-EXPEDITION,

WITH DESCRIPTION OF A NEW SPECIES

BY

C. RITSEMA Cz. <sup>2)</sup>.

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Fam. LUCANIDAE.

Gen. **Metopodontus** HOPE.

1. *occipitalis* Hope, Cat. Lucan. Col. 1845, p. 13, ♂ and  
♀. — Westwood, Cab. of Orient. Entom. 1848,  
p. 22; pl. 10, fig. 4, ♂.  
Mt. Liang Gagang, March 1894, 1 ♀ (Hallier).  
Sintang, 1 ♀ (Goedhuis).

Gen. **Cyclommatus** PARRY.

1. *tarandus* Thunberg, Mém. Moscou, I, 1806, p. 190;  
pl. 12, fig. 1, ♂. — *rangifer* Schönh. Syn.  
Ins. I, 3, 1817, p. 322.

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1) An ample explanation of the different localities where the zoological collections were obtained, will be given later on in the „Notes” by Mr. J. Bütikofer in his paper on the ornithological collections of the expedition.

2) In the following Note an enumeration will be found of the Lucanidae hitherto known as inhabiting the island of Borneo.

Pontianak, 4 ♂♂ and 1 ♀ (Moret).

The males belong all to the forma maxima.

2. *DeHaanii* Westwood, Ann. a. Mag. Nat. Hist. VIII, 1842, p. 124, ♂<sup>1)</sup>. — Id. Cab. of Orient. Entom. 1848, p. 21; pl. 10, fig. 2, ♂ (sub nom. *rangifer* Schönh. var.). — *affinis* Parry, Cat. Lucan. Col. 1864, p. 40, ♂<sup>2)</sup>.

Mt. Liang Gagang, March 1894, 1 ♂ (Hallier).

Poetoës Sibau, June 1894, 1 ♂ (Büttikofer).

The ♂ from Poetoës Sibau is very near to the type-specimen of *DeHaanii* Westw., that from Mt. Liang Gagang very near to the type-specimen of *affinis* Parry.

Gen. **Odontolabis** HOPE.

1. *Dalmanni* Hope, Cat. Lucan. Col. 1845, p. 17, ♂. — Leuthner, Monogr. Odont. 1885, p. 439; pl. 87, figs. 4—7, ♂ and ♀.

Sintang, 1 ♀ (Goedhuis).

2. *gazella* Fabricius, Mant. Ins. I, 1787, p. 1, ♀. — *bicolor* Olivier, Entom. I, 1, 1789, p. 22; pl. 5, fig. 20, ♂. — Leuthner, Monogr. Odont. 1885, p. 463; pl. 96, figs. 10 and 11, ♂ and ♀; pl. 91, fig. 6, ♀.

Southern foot of Mt. Kenepai, December 1893, 2 ♀♀ (Büttikofer).

3. *Brookeanus* Vollenhoven, Tijdschr. v. Entom. IV, 1861, p. 107; pl. 6, fig. 1, ♂. — Leuthner, Monogr. Odont. 1885, p. 469; pl. 95, figs. 13—18, ♂ and ♀.

Sambas, October 1893, 1 ♂ (Hallier).

Mt. Kenepai, January 1894, 1 ♂ and 1 ♀ (Büttikofer).

The ♂ from Mt. Kenepai belongs to the forma

1) Published in October 1841.

2) The specimen from the Philippine islands no doubt belongs to *Cyclomatus Zuberi* Waterh.

telodonta, the ♀ (from the same locality) has a broad triangular dark brown mark along the middle of the elytra. The ♂ from Sambas belongs to the forma priodonta.

4. *latipennis* Hope, Cat. Lucan. Col. 1845, p. 17, ♀. — *Dejeani* Reiche, Rev. et Mag. de Zool. (2) IV, 1852, p. 23; pl. 1, fig. 4, ♂. — Leuthner, Monogr. Odont. 1885, p. 471; pl. 96, figs. 1—4, ♂ and ♀.

Sintang, 1 ♂ (Goedhuis).

This specimen belongs to the forma priodonta, and as it measures only 45 mm. in length, it agrees in size with the specimens from Banka alluded to by Leuthner (*l. c.* p. 472).

Gen. **Ditomoderus** PARRY.

1. *mirabilis* Parry, Cat. Lucan. Col. 1864, p. 45; pl. 12, fig. 6, ♂.

Nanga Raoen, March 1894, 1 ♂ (Büttikofer).

Mt. Liang Koeboeng, March 1894, 1 ♂ and 1 ♀ (Büttikofer).

The ♂ from Nanga Raoen, which measures (the mandibles included) 27 mm. in length, does not show the well-defined longitudinal impression on the lateral margins of the prothorax which is present in higher developed specimens, and, moreover, the central tubercle of the front of the head is obliterated in this specimen. The ♂ from Mt. Liang Koeboeng, which has, with mandibles, a length of 45 mm., shows these characteristics very clearly.

Gen. **Eurytrachelus** THOMS.

1. *Titan* Boisduval, Voyage de l'Astrolabe, Coléopt. p. 237; pl. 6, fig. 19, ♂. — Albers, Deuts. Ent. Zeitschr. 1889, p. 234, ♀.

Mt. Liang Gagang, March 1894, 1 ♂ (Hallier).

Mt. Dadap, October 1894, 1 ♂ (Moret).

Both specimens belong to the forma major.

The specimen from Mt. Liang Gagang measures (with mandibles) 62 mm., that from Mt. Dadap 75 mm.

2. *purpurascens* Vollenhoven, Tijdschr. v. Entom. IV, 1861, p. 111, pl. 7, figs. 1 and 2, ♂<sup>1</sup>). — Albers, Deuts. Ent. Zeitschr. XXVIII, 1884, p. 173, ♂ (var. *capito*).

Mt. Liang Koeboeng, March 1894, 1 ♀ (Büttikofer).

Kampong Boegau: Ketoengau District, September 1894, 1 ♂ (Moret).

The ♂ belongs to the forma major, and has the teeth of the mandibles strongly worn off.

#### Gen. **Gnaphaloryx** BURM.

1. *taurus* Fabricius, Syst. Eleuth. II, 1801, p. 250, ♂. — Albers, Deuts. Ent. Zeitschr. 1889, p. 236.

Southern foot of Mt. Kenepai, December 1893, 1 ♂ (Büttikofer).

Ulac, N.W. from Mt. Kenepai, September 1894, 1 ♂ (Moret).

#### Gen. **Aegotypus** PARRY.

1. *trilobatus* Parry, Cat. Lucan. Col. 1864, p. 59; pl. 7, fig. 7, ♂. — Id. Trans. Ent. Soc. London, 1874, p. 371; pl. 5, figs. 4 and 5, ♂ and ♀.

Mt. Liang Koeboeng, March 1894, 1 ♂ (Büttikofer).

In this specimen the middle of the front margin of the head is not reflexed as is the case in the male described by Parry in

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1) An immature ♀ of this species, still to be found in the Leyden Museum, has been described and figured by Snellen van Vollenhoven (*l.c.* p. 114, pl. 7, fig. 6) as the female of *Prospocochus tragulus* Voll., as is also stated by Parry. (*Conf.* Cat. Lucan. Col. 1864, p. 24).



1874, but the mandibles are of equal development in both specimens. Parry's specimen measured 17 mm. in length, that from Mt. Liang Koeboeng 15½ mm.

Gen. **Aegus** MC. LEAY.

1. *capitatus* Westwood, Trans. Ent. Soc. London, IV, 1847, p. 275; pl. 20, fig. 5, ♂. — Ritsema, Notes Leyd. Mus. XI, 1889, p. 229.

Sekedau River, October 1894, 1 ♂ (Moret).

Singangi: Ketoengau District, 4 ♂♂ and 3 ♀♀ (Moret).

One ♂ (from Singangi) belongs to the forma media, the others belong all to the forma major.

2. *malaccus* Thomson, Rev. et Mag. de Zool. (2) VIII, 1856, p. 527, ♂ et ♀. — *rectangulus* Vollenhoven, Tijdschr. v. Ent. IV, 1861, p. 114; pl. 7, fig. 7, ♂. — Id. Tijdschr. v. Ent. VIII, 1865, p. 156.

Southern foot of Mt. Kenepai, January 1894, 1 ♂ (Büttikofer).

Singangi: Ketoengau District, 15 ♂♂ and 1 ♀ (Moret).

The length of the males (the mandibles included) varies from 16 mm. to 8 mm. The female specimen has a length of 9 mm.

3. *amictus* H. Deyrolle, Ann. Soc. Ent. Belge, IX, 1865 <sup>1)</sup>, p. 35; pl. 2, fig. 7, ♂.

Singangi: Ketoengau District, 4 ♂♂ (Moret).

These specimens seem not to belong to the forma major, the lateral margins of the prothorax being straight and parallel, not notched near the anterior angles. The mandibles are very slender and straight, and those of the two largest specimens, which measure (the mandibles included) 11 mm.,

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1) Published in 1866.

have the tooth on the middle well-developed and acute, but in those of the two smallest specimens, measuring 9 and  $8\frac{1}{2}$  mm., this tooth is only indicated by a slight enlargement of the inner margin.

4. *ogivus* H. Deyrolle, Ann. Soc. Ent. Belge, IX, 1865 <sup>1)</sup>, p. 33; pl. 2, fig. 4, ♂.

Southern foot of Mt. Kenepai, January 1894, 1 ♂ (Büttikofer).

Mt. Liang Gagang, March 1894, 1 ♀ (Hallier).

Sintang, September 1894, 1 ♀ (Goedhuis).

Sekedau River, October 1894, 4 ♂♂ (Moret).

Singangi: Ketoengau District, 18 ♂♂ and 3 ♀♀ (Moret).

Pontianak, 1 ♂ (Moret).

In the smaller male-specimens of this species the anterior lateral angles of the prothorax are not obliquely truncate as is the case in the larger individuals, but rounded. In one of the males from Singangi, which has two small teeth on the inner edge of each mandible, the right anterior angle of the thorax is obliquely truncate, the left one, however, broadly rounded. The ♀ has, like the ♂, the posterior angles of the prothorax deeply notched.

5. *punctipennis* Parry, Cat. Lucan. Col. 1864, p. 58, ♂.  
Sintang, 1 ♀ (Goedhuis).

6. *impressicollis* Parry, Cat. Lucan. Col. 1864, p. 58;  
pl. 5, fig. 3, ♂.

Singangi: Ketoengau District, 1 ♀ (Moret).

#### Gen. **Figulus** MC. LEAY.

1. *marginalis* Ritsema, Notes Leyd. Mus. I, 1879, p. 189.  
— *subcastaneus* Vollenhoven (nec Westwood),  
Tijdschr. v. Entom. VIII, 1865, pp. 146 and 156.

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1) Published in 1866.

Singangi: Ketoengau District, 1 ♂ (Moret).

Pontianak, 1 ♂ (Moret).

The ♂ is distinguished by the more slender anterior tibiae and the presence of a semi-circular dilatation at the end of their inner margin; moreover their terminal spine is stouter and more strongly curved than in the ♀.

2. *impressicollis*, nov. spec.

Mt. Kenepai, January 1894, 1 ♂ (Büttikofer).

DESCRIPTION: Length (the mandibles included)  $14\frac{1}{2}$  mm.

Glossy black, the femora dark red. Elongate, the thorax distinctly broader than the elytra at the shoulders, the elytra slightly narrowing towards the apex.

The head is very glossy, narrower than the thorax, concave between the eyes, the occiput regularly convex in a transverse direction; impunctate with the exception of two transverse elevations between the eyes, which elevations are finely but rather densely punctured; the inner orbit is raised and ends anteriorly in a more strongly raised longitudinal tubercle; the anterior margin is straight and provided in the middle with two small tubercles which are separated by a semicircular notch; the ocular canthus is broad, broadly rounded anteriorly, obliquely cut off behind, the lateral margins are parallel and slightly raised. The mandibles are strongly and regularly curved, finely punctured, their outer margin is raised, more strongly towards the tip.

The prothorax is broader than the head, distinctly transverse, narrowly grooved all-around except in the middle of the front margin, the groove covered with shallow punctures; the front margin bisinuate, with a distinct tubercle in the middle; the anterior angles prominent and rounded, the sides parallel, the posterior angles subangular, the base faintly bisinuate; the disk shining, provided with seven strongly punctured impressions, viz. a longitudinal one along the middle approaching nearer to the

base than to the front margin, two round ones just before the middle of the length, two oval ones near the base, just between the median impression and the lateral margins, and two more diffuse ones on the outside of the round impressions; moreover a group of large punctures is present along the front margin between the lateral angles and the median tubercle. The scutellum is narrow and elongate, without punctures.

The elytra are very glossy, narrower than the prothorax and slightly narrowing towards the end, the shoulders faintly pointed; they are regularly striate all-over, the striae provided with a row of coherent shallow and opaque punctures which become larger towards the sides of the elytra; the interstices are convex and impunctate with the exception of the two outermost ones which are flat and bear a few punctures; the apical portion is coarsely punctured.

The jugulum is very glossy and impunctate, the mentum irregularly and indistinctly wrinkled. The middle of the metasternum is indistinctly punctured and provided with an impressed median line which does not reach the front margin, the sides are covered with horse-shoe shaped punctures. The abdominal segments are densely covered with large punctures; on the last segment, however, they are smaller and wider apart, and moreover a faint impression may be observed in the lateral corners. The intermediate tibiae are armed with four, the posterior ones with three spines.

This species belongs to Parry's Section C: elytra regularly punctate-striate.

Leyden Museum, September 1895.

## NOTE XXII.

THE SPECIES OF LUCANOID COLEOPTERA  
HITHERTO KNOWN AS INHABITING  
THE ISLAND OF BORNEO

ENUMERATED BY

**C. RITSEMA Cz.****Hexarthrius** Hope.**mandibularis** H. Deyr. — *Teste* H. Deyrolle: Ann. Soc.  
Ent. France, 1881, p. 237; pl. 5, fig. 2.**elongatus** Jordan. — Kina Balu, teste Jordan: Novitates  
Zoologicae, I, 1894, p. 484.**Metopodontus** Hope.**occipitalis** Hope. — Various localities, in Mus. Leyd.**asteriscus** Thoms. — *Conf.* C. O. Waterhouse: Ann. and  
Mag. Nat. Hist. (6) V, 1890, p. 35.**sericeus** Westw. — Sandakan, in Mus. Leyd.**Prosopocoelus** Hope.**squamilateris** Parry. — Sarawak, teste Gestro: Ann. Mus.  
Civ. Genova, 1881, p. 308.**Cyclommatus** Parry.**tarandus** Thunb. (= *rangifer* Schönh.). — Pontianak and  
Sambas, in Mus. Leyd.**Dehaanii** Westw. (= *affinis* Parry). — Various localities, in  
Mus. Leyd.**insignis** Parry. — Sandakan, in Mus. Leyd.**squamosus** Rits. — Sintang, in Mus. Leyd.

Notes from the Leyden Museum, Vol. XVII.

*canaliculatus* Rits. (? = *de Haanii* Burm. nec Westw.). — Sambas, in Mus. Leyd.

### **Odontolabis** Hope.

*Dalmanni* Hope. — Sintang, in Mus. Leyd.

*Vollenhoveni* Parry. — *Conf.* F. Leuthner: Mon. Odont. p. 459. *gazella* Fabr. (= *bicolor* Oliv.). — Mt. Kenepai, in Mus. Leyd.

*Castelnaudi* Parry. — *Conf.* F. Leuthner: Mon. Odont. p. 466.

*Sommeri* Parry (= *Loweï* Gestro). — Without more definite locality, in Mus. Leyd.

*Brookeanus* Voll. — Various localities, in Mus. Leyd.

*Loweï* Parry. — *Conf.* F. Leuthner: Mon. Odont. p. 470.

*latipennis* Hope (= *Dejeani* Reiche). — Sintang, in Mus. Leyd.

*striatus* H. Deyr. — Sandakan, in Mus. Leyd.

» var. *cephalotus* Leuthn. — *Conf.* F. Leuthner: Mon. Odont. p. 478.

### **Chalcodes** Westw.

*aeratus* Hope. — Sambas, in Mus. Leyd.

### **Neolucanus** Thoms.

*muntjac* Gestro. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 314.

### **Ditomoderus** Parry.

*mirabilis* Parry. — Various localities, in Mus. Leyd.

### **Eurytrachelus** Thoms.

*Titan* Boisd. — Various localities, in Mus. Leyd.

*purpurascens* Voll. — Various localities, in Mus. Leyd.

### **Hemisodorcus** Thoms.

*passaloides* Hope. — Sintang, in Mus. Leyd.

### **Gnaphaloryx** Burm.

*taurus* Fabr. — Various localities, in Mus. Leyd.

*squalidus* Hope. — Without more definite locality, in Mus. Leyd.

Notes from the Leyden Museum, Vol. XVII.

**Eulepidius** Westw.

**luridus** Westw. — *Teste* Westwood: Trans. Ent. Soc. London, 1874, p. 357; pl. 3, fig. 1.

**Aegotypus** Parry.

**trilobatus** Parry. — Mt. Liang Koeboeng, in Mus. Leyd.

**Aegus** Mc. Leay.

**capitatus** Westw. — Various localities, in Mus. Leyd.

**parallelus** Hope. — *Conf.* Parry's Catal. 3<sup>rd</sup> ed. 1875, p. 18.

**Eschscholtzi** Hope. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 326.

**malaccus** Thoms. (= *rectangulus* Voll.). — Mt. Kenepai and Ketoengau District, in Mus. Leyd.

**adelphus** Thoms. — *Conf.* Parry's Catal. 3<sup>rd</sup> ed. 1875, p. 18.

**amictus** H. Deyr. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 327.

**Parryi** Waterh. — Sarawak, teste C. O. Waterhouse: Ann. and Mag. Nat. Hist. (6) V, 1890, p. 37.

**ogivus** H. Deyr. (= *kandiensis* Parry, partim). — Various localities, in Mus. Leyd.

**chelifer** Mc. Leay. — Without more definite locality, in Mus. Leyd.

**punctipennis** Parry. — *Conf.* Parry's Catal. 3<sup>rd</sup> ed. 1875, p. 18.

**impressicollis** Parry. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 332.

**Nigidius** Mc. Leay.

**obesus** Parry. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 334.

**Figulus** Mc. Leay.

**laticollis** Eschsch. — Without more definite locality, in Mus. Leyd.

**marginalis** Rits. — Ketoengau District, in Mus. Leyd.

**scaritiformis** Parry. — Sarawak, teste Gestro: Ann. Mus. Civ. Genova, 1881, p. 339.

*mediocris* H. Deyr. — *Conf.* Parry's Catal. 3<sup>rd</sup> ed. 1875, p. 22.

*rugosus* H. Deyr. — *Conf.* Parry's Catal. 3<sup>rd</sup> ed. 1875, p. 22.

*impressicollis* Rits. — Mt. Kenepai, in Mus. Leyd. (ante p. 139).

### **Cardanus Westw.**

*sulcatus* Westw. — Without more definite locality, in Mus. Leyd.

The following three species are incorrectly recorded in the Munich Catalogue as originating from Borneo:

*Cyclommatus faunicolor* Hope. This species is indicated from Java. (*Conf.* Trans. Ent. Soc. Lond. IV, p. 273).

*Odontolabis Lacordairei* Voll. (from Sumatra), being not identical with the Bornean *O. Lacordairei* Parry in litt. The latter species has afterwards been described by Parry under the name of *O. Vollenhoveni*.

*Aegus kandiensis* Hope. The specimens from Borneo, mentioned by Parry in the 1<sup>st</sup> edition of his Catalogue of Lucanoid Coleoptera (p. 53), turned out to belong to *Aegus ogivus* H. Deyr. (*Conf.* the 2<sup>nd</sup> edition of Parry's Catalogue, p. 93).

In the tabular view of the geographical distribution of the Lucanidae in the Eastern Archipelago (Ann. Mus. Civ. Genova, 1881) 39 species are recorded by Dr. Gestro as inhabiting the island of Borneo, but one of these (*Aegus kandiensis* Hope) ought to be removed from this list as is shown above. The present enumeration gives the names of 49 species and one variety.

Leyden Museum, September 1895.



NOTE XXIII.

ZOOLOGICAL RESULTS OF THE DUTCH SCIENTIFIC  
EXPEDITION TO CENTRAL BORNEO <sup>1)</sup>.

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THE MOLLUSCA OF THE DUTCH SCIENTIFIC  
BORNEO-EXPEDITION,

WITH DESCRIPTION OF THE NEW SPECIES

BY

M. M. SCHEPMAN.

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(Plates 2, 3 and 4).

As the reader will see from the head of this paper, the collections are principally made in the interior of the island and therefore almost entirely restricted to terrestrial and freshwater forms. Seven new species have been obtained, while many others are very interesting with regard to the geographical distribution.

The few marine specimens, all belonging to common species, have been obtained by Dr. Hallier, the botanist of the expedition, on the Coast of Sambas and the opposite island Lemoekoetan.

I have given in this paper a complete list of the species, with description of the new ones.

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1) An ample explanation of the different localities where the zoological collections have been obtained, will be given later on in the „Notes” by Dr. J. Büttikofer in his paper on the ornithological collections of the expedition.

## A. LAND- AND FRESHWATER MOLLUSKS.

1. *Vaginula Hasselti* Martens.

Martens, Preuss. Exped. nach Ost-Asien, Landschnecken, p. 176; pl. 5, fig. 4 (and 2).

Localities: Foot of Mount Kenepai, December 1893 (Büttikofer). — Poetoës Sibau and Poelau on the Sibau river, June 1894 (Büttikofer).

From each of the first-named localities one rather large specimen, from the third one four specimens.

2. *Vaginula Wallacei* Issel.

Issel, Molluschi Borneensi, in: Ann. del Mus. Civ. di Stor. Nat. di Genova, vol. VI, 1874, p. 385; pl. 4, figs. 1—3.

Localities: Smitau, December 1893 (Büttikofer). — Singtang (Büttikofer).

With this species I have identified a few specimens, slightly differing from each other in colour, but agreeing in other respects with the description of Issel, who had only one specimen for examination. Some specimens are more densely covered with the black spots than others; these spots are sometimes entirely absent on the underside of the mantle. A somewhat lighter zone on the median line exists in a few specimens, but not so clear as in the former species. The female generative aperture is situated on the posterior half of the body, while in *V. Hasselti* it lays in the anterior part. In the figure given by Issel the buccal mass is partly extruded, which often occurs in drowning the animals.

3. *Parmarion Goedhuisi*, n. sp.

(Plate 2, fig. 1).

Reddish grey, with more or less blackish shades on the neck, the upper part of the head, of the mantle and of the hindmost part of the body, where the black is concentrated near the sharp, grey keel, and divided into two black streaks under the intestinal pouch. The sides of the

head and tail and the margin of the foot are marked with black spots; the ground-colour remains unspotted at the sides of the body below the pouch, on the keel and lowermost part of the pouch itself. The three zones of the foot are unspotted, and of the same colour as the upperside; the large mucous pore of the posterior end is provided above with a hornlike process. The keel of the intestinal pouch is not very prominent, and through the hole in its centre a golden yellow shell is visible; this latter is lustrous, provided with rather distant concentric folds, and seems to be thin, transparent, slightly calcareous in the centre, with a membranaceous margin.

Length of the animal (in spirits) about 31, that of the mantle 18 mill.; breadth of the foot  $3\frac{1}{2}$  mill.

Length of the shell about  $12\frac{1}{2}$ , breadth 8 mill.

Localities: Smitau, December 1893 and June 1894 (Büttikofer). — Sintang (Goedhuis).

I can find no species with which our specimens may be identified; they differ from both species described by Issel. *P. Doriae* Issel is distinguished by having conspicuous dark spots; the new species agrees in colour more with *P. Beccarii* Issel, but the latter is still much more spotted; moreover *P. Goedhuisi* has a much more oblong shell. Issel says that the shell in *P. Beccarii* is »luteo-viridescens”, in *P. Doriae* »rufa”. The space occupied by the intestinal pouch is considerably larger in *P. Goedhuisi* than in any of the other known Bornean species.

#### 4. *Parmarion Doriae* Issel.

Issel, Molluschi Borneensi, in: Ann. del Mus. Civ. di Stor. Nat. di Genova, vol. VI, 1874, p. 388; pl. 4, figs. 7, 8.

Localities: Top of Mount Damoes, near Sambas, 1100—1300 feet (Hallier). — Mount Kenepai (Büttikofer).

With some doubt I have identified these two specimens with *P. Doriae* of which only one specimen was known; the dark spots on the mantle are distinct, on the tail they are very obsolete if present at all in the specimen from

Mount Damoes, but I do not venture to describe new species in so difficult a genus on so little materials, unless the characters are very prominent.

5. *Microparmarion litteratus*, n. sp.

(Plate 2, fig. 2).

Body reddish grey, with black shades on the neck, the upper part of the head, a space on the forepart of the body above the margin of the foot, and the upper part of the tail, with the exception of the keel; the mantle with its lobes is sprinkled with irregular black spots, flowing together here and there and making the appearance of scripture; foot with its margin unspotted. Mucous pore with a horn above. Keel of the intestinal pouch rather obscure on the right side, more prominent on the left one. The part of the mantle surrounding the posterior part of the shell is membranaceous, giving the lateral parts the appearance of free lobes, like in *Helicarion*. The shell is very thin, wrinkled, greenish yellow, and shows traces of a volution. A large genital pore may be observed near the right side of the head.

Length of the animal (in spirits) about 30, that of the mantle 17 mill.; breadth of the foot nearly 3 mill.

Locality: Top of Mount Damoes, near Sambas, 1100—1300 feet (Hallier).

I have placed this species in the genus *Microparmarion*, on account of the volution of the shell, which at once distinguishes it from the former two species. The fact that the mantle looks interrupted posteriorly is, as far as I know, peculiar. The mantle is so strongly contracted as to expose also the under part of the intestinal pouch, which seems to be covered by a very thin layer of the shell, somewhat like in the next species, where the lobes of the mantle are free posteriorly. It is very desirable that larger series of this and allied forms may be collected, to permit a more accurate examination of the exterior and

interior characters. This and the next species seem to be transitional forms between *Parmarion* and *Helicarion*<sup>1)</sup>.

6. *Helicarion semicalcareus*, n. sp.

(Plate 2, fig. 3).

Shell globose, slightly depressed, only the upper part calcareous, lower part membranaceous, forming on the limit a slight angle; as the shell of the unique specimen is coherent to the body, its under surface and the form of the aperture are not visible; upper part smooth, shining, with a few wrinkles; colour golden yellow, except the nucleus which is chalk-white; spire and suture slightly sunken; whorls about 2, very rapidly increasing, nearly the whole shell formed by the last whorl, giving it the character of being a *Vitrina*; aperture very large, peristome thin.

Animal reddish grey, with darker shades on the back; sharply keeled, keel reddish behind; mucous pore with a horn above; shell-lobes with black streaks and spots; moreover a black line runs on the part of the mantle, which borders and covers the peristome.

Diam. maj. (of shell)  $9\frac{1}{2}$ , min. 7 mill. — Length of the animal 21 mill.

Locality: Top of Mount Liang Koeboeng, March 1894 (Büttikofer).

This species has much puzzled me; at first sight it looks like a *Vitrina* but on closer examination I can only identify it with *Helicarion*. It may be allied to *H. Whiteheadi* Godwin Austen, as most of the characters of this species can be applied to the specimen before me. Besides other differences, the most striking peculiarity by which it is distinguished from *Whiteheadi*, is the membranaceous substance of the infra-peripheral part of the shell. If later on more material of my species and of *H. Whiteheadi* will

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1) Messrs W. E. Collinge and H. H. Godwin-Austen have lately described two other species of *Microparmarion* from Borneo, and have given many anatomical details (Proc. Zool. Soc. London, 1895, p. 241; pls. 11—14).

be discovered, and the anatomical characters can be studied, they will perhaps prove to belong to a new genus.

7. *Xesta glutinosa* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 70. — Reeve, Conch. Icon. fig. 1378.

Locality: Mount Liang Koeboeng (Büttikofer).

With this species I identify with some doubt a broken shell, wanting part of the columellar margin and adjacent part of the peristome; it is very thin and pellucid, light greenish yellow, the keel but slightly indicated; if belonging to this species, it is an albino.

8. *Xesta Thisbe* E. A. Smith.

Smith, Proc. Zool. Soc. London, 1895, p. 101; pl. 2, fig. 4.

Locality: Mount Liang Koeboeng (Büttikofer).

One specimen. — This species is identified by its author, together with some other species, which remained doubtful, for want of materials for comparison.

9. *Hemiplecta densa* Adams & Reeve.

Adams & Reeve, Zool. Voy. Samarang, Moll. p. 62; pl. 16, fig. 8. — Martens, l. c. p. 230.

Locality: Near the coast of Sambas (Hallier).

The specimens belong to a form with a very thick shell.

10. *Hemiplecta praeculta* E. A. Smith.

Smith, Proc. Zool. Soc. London, 1895, p. 101; pl. 2, fig. 7.

Locality: Poelau on the Sibau River, June 1894 (Büttikofer).

Only one young specimen.

11. *Hemiplecta Büttikoferi*, n. sp.

(Plate 3, fig. 1).

Shell dextral, depressedly conoid, with a narrow umbilicus, sharply angulated at the periphery, rather thin,

covered with a brownish yellow epidermis and provided with a black line below the suture and a narrow reddish brown zone, upon the keel of the last whorl; the sculpture consists of rather faint lines of growth; nuclear whorls nearly smooth, with only faint plicae near the suture, next whorls with spiral striae, the two last whorls moreover with oblique grooves, which give to the surface the appearance of being covered with oblique rugosities, which extend below the keel, but towards the umbilicus the spiral striae prevail, the other sculpture becoming obsolete. Spire conical, moderately elevated; whorls  $5\frac{1}{2}$ , rather flat, with a superficial suture, last whorl large and with a rather sharp keel; base of the shell more inflated, somewhat compressed near the keel. Aperture large, not descending, slightly oblique rhomboid, peristome straight, obtuse; upper margin sinuous, lower margin regularly rounded, passing without angle in the columellar margin, which is only slightly reflected near the umbilicus.

Diam. maj. 64, min. 53, alt. 33 mill.; apert. lat. 35, alt. 27 mill.

Localities: Nanga Raoen, May 1894 (Büttikofer). — Mount Liang Koeboeng (Büttikofer).

Of the specimen from Mt. Liang Koeboeng, with broken shell, I have made the anatomical notes.

This species, which I have named in honour of the Zoologist of the expedition, is allied to *H. densa*, but the shell is much larger than the largest specimen recorded by v. Martens (Ostas. Landschn. p. 230) which is only 54 mill. in diameter; the aperture is proportionately larger, the shell thinner, the umbilicus much smaller, and the last whorl broader. The sculpture is rather similar in both species.

Anatomy: The buccal mass is large, long 9, high 10 mill., rounded triangular, the radula-sac very slightly projecting; from the upper part proceeds a long oesophagus, which shows two enlargements, the first immediately behind the buccal mass and followed by a sudden constriction; from this latter the second reaches unto the place

where the salivary glands are affixed; these latter are long (measuring about 18 mill.), the ducts are long and narrow (length about 30 mill.). The salivary glands are nearly grown together over their total length, the right half being produced into a point, the right duct is consequently the shortest. The jaw, measuring  $5\frac{1}{3}$  mill. in latitude, is smooth, dark brownish yellow, arched, with rounded extremities; the free margin is provided with a blunt tooth. The radula, which was rather brittle, is about 12 mill. long, with a breadth of about 6 mill.; on account of their brittleness the margins were generally damaged, and the number of the rows of teeth could not be stated with accuracy; the largest number of rows in length is about 145, in breadth 301; the central tooth of each row is conical, oblong, with one cusp; the next lateral ones are slightly larger and unsymmetrical but for the rest similar; about the 20<sup>th</sup> lateral tooth on each side grows more slender, and between the 24<sup>th</sup> and 27<sup>th</sup> a rudimentary second cusp makes its appearance at the outer side of the principal one, and, gradually descending at each successive row, it becomes nearly equal to the principal cusp, from between the 50<sup>th</sup> and 60<sup>th</sup> tooth up to the margin.

The generative organs consist of a hermaphrodite gland, imbedded in the liver; it has a long duct, measuring 40 mill. in its natural position, moreover it is strongly twisted, and, if extended, it would be still considerably longer; albumen gland moderate, 15 mill. in length, oviduct strongly developed and wrinkled; upper part of the vagina much swollen; below this part a short, oval spermatheca, apparently without duct, is inserted; its top is affixed on the ovospermiduct by a short, broad muscle; a cylindrical part of the vagina leads to the generative cloak, which has on one side a very long, cylindrical, wormlike amatorial organ, which shows a single coil, and has a muscle at its top; the length is about 85 mill. Opposite to it, the penis is situated, which is bent on itself; the part adjacent to the cloak is about 15 mill. in length, then it



is divided in a short flagellum of  $3\frac{1}{2}$  mill., with a thin muscle which was united with the prostata; the bent part of the penis is nearly 5 mill.; on its top a long, slender retractor and the vas deferens, leading to the prostata, are inserted.

12. *Ryssota Brookei* Adams & Reeve.

Adams & Reeve, Zool. Voy. Samarang, Moll. p. 60; pl. 15, figs. 4a, 4b. — Reeve, Conch. Icon. fig. 377.

Localities: Mouth of the Mandai River, May 1894 (Büttikofer). — Foot of Mount Kenepai (Büttikofer).

From the first named locality a rather young specimen, with the oblique folds of the superior side of the shell well developed. The other specimen is full-grown with a thickened peristome.

13. *Dyakia nasuta* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 70. — Reeve, Conch. Icon. fig. 1031.

Locality: Top of Mount Klam near Sintang, January 1894 (Hallier).

A few specimens, the largest of which measures only 24 mill. instead of 35, as is mentioned by the author; having also a whorl less, it may be a young one, though the projection of the aperture is already faintly marked. The specimens are too little in number, to describe a new variety upon, which will probably prove to be desirable when more material is at hand.

14. *Dyakia Lindstedti* Pfr. var. *castanea* E. A. Smith.

Smith, Proc. Zool. Soc. London, 1895, p. 103.

Localities: Foot of Mount Semedoem, 350 M., and foot of Mount Damoes (Hallier). — Sintang (Goedhuis).

15. *Dyakia mindaiensis* Bock.

Bock, Proc. Zool. Soc. London, 1881, p. 633; pl. 55, fig. 7.

Locality: Cavern on Mount Liang Koeboeng, 800 M., March 1894 (Büttikofer).

One fine specimen, larger than the type described by Bock, measuring 38 instead of 30 mill., but agreeing with it in every other respect.

16. *Dyakia densestriata*, n. sp.

(Plate 3, fig. 2).

Shell dull reddish brown, discoid, narrowly umbilicated, sharply keeled; sculpture: above remote rib-like folds, with hair-like intermediate raised striae, scarcely visible without a lens; these striae are waved and granular, the granulation giving the appearance to the shell of being spirally striate; under surface with the same sculpture, but less developed and accordingly more smooth and shining, moreover with a few scattered grooves; apex blunt; spire moderately elevated, with 7 slowly increasing, nearly flat whorls; suture shallow, in some parts showing the keel, which is sharp and prominent in the last whorl; the shell is slightly excavated above and below the keel; aperture semilunate, slightly oblique; peristome thin, with a short, curved upper margin and a regularly rounded lower one, which is slightly produced in the middle; columellar margin very oblique, slightly reflected on and partly covering the umbilicus.

Diam. maj. 37, min. 33, alt. 19 mill.; apert. lat. 18, alt.  $13\frac{1}{2}$  mill.

Localities: Mount Liang Gagang, March 1894 (Hallier). — Mount Tiloeng, May 1894 (Büttikofer). — Sintang (Büttikofer).

In the first named locality one dextral and some sinistral specimens have been collected; on Mount Tiloeng one sinistral. Most of the specimens have also spiral and oblique grooves on the upper part of the shell. The specimen from Sintang is incomplete; though slightly differing in sculpture, I think it may be merely a variety.

The nearest allied species, as far as concerns shape, seems to be *Nanina* (*Dyakia*) *Janus*, as figured by v. Martens (Ostas. Landschn. pl. 11, fig. 4), but the last whorl in that species is broader, the upper margin of the aperture is consequently longer and seems to be less curved, and the sculpture is different.

17. *Everettia consul* Pfeiffer.

Pfeiffer, Proc. Zool. Soc. London, 1854, p. 289; id., Nov. Conch. III, p. 306; pl. 74, figs. 11, 12.

Locality: Mount Sekedau, small mountain near Mount Kenepai (Moret).

18. *Everettia hyalina* Martens.

Martens, Preuss. Exped. nach Ost-Asien, Landschn. p. 241; pl. 12, fig. 5.

Localities: Smitau, December 1893 (Büttikofer). — Foot of Mount Tiloeng, February 1894 (Büttikofer). — Sintang (Büttikofer).

19. *Everettia cinnamomea* Eydoux.

Eydoux, Magasin de Zool. 1838, pl. 116, fig. 1.

Locality: Sintang (Moret).

The specimens are slightly different in colour from specimens from the Natuna Islands, which are darker.

20. *Everettia* sp.

Locality: Mount Liang Koeboeng, March 1894 (Büttikofer).

One young specimen of about 4 whorls, reddish horn-colour. It cannot be identified with certainty.

21. *Trochomorpha bicolor* Martens.

Martens, l. c. p. 252; pl. 13, fig. 2.

Localities: Mount Kenepai (Büttikofer). — Smitau (Büttikofer).

With spiral striae on the under surface, as stated by v. Martens (l. c. p. 253) for some Bornean specimens.

22. *Trochonanina conicoides* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 71. —  
Reeve, Conch. Icon. fig. 449.

Locality: Coast of Sambas (Hallier).

One specimen.

23. *Amphidromus inversus* Müller.

Martens, Preuss. Exped. nach Ost-Asien, Landschn. p.  
337. — Reeve, Conch. Icon. fig. 220 (*Bul. contusus*).

Localities: Coast of Sambas (Hallier). — Smitau on the  
Kapoeas River, and Roema Manoeal on the southern foot  
of Mount Kenepai (Büttikofer). — Mount Dadap (Moret).  
— Sintang (Goedhuis).

The specimen from the first named locality is sinistral,  
the majority of the other specimens is dextral; nearly all  
are rather small, measuring only  $43\frac{1}{2}$  and 45 mill.

24. *Amphidromus perversus* Linn. var. *atricollosus* Gould.

Gould, Boston Journ. IV, p. 457; pl. 24, fig. 3. —  
Smith, Proc. Zool. Soc. London, 1895, p. 115; pl. 3,  
fig. 19.

Localities: Mounts Sekedau and Dadap (Moret).

The specimens agree better with Smith's figure than  
with Reeve's fig. 188. They have brown spots on the  
white zone near the suture, which are not mentioned in  
the descriptions at my disposal.

25. *Amphidromus Adamsi* Reeve.

Reeve, Conch. Icon. fig. 73.

Localities: Foot of Mount Tiloeng, March 1894 (Büt-  
tikofer). — Mounts Dadap and Sekedau, Ketoengan River  
(Moret). — Sintang (Goedhuis).

Most specimens agree better with Martens' figure (Ostas.  
Landschn. pl. 21, fig. 5a) than with those of Reeve, which  
represent other varieties. The specimen from Sintang much  
resembles var. E. of Issel (Moll. Born. pl. 5, fig. 28).

26. *Cyclophorus borneensis* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 71. — Martens, Preuss. Exped. nach Ost-Asien, Landschn. p. 136; pl. 3, figs. 5, 6.

Localities: Mount Liang Koeboeng, March 1894 (Büttikofer). — Southern foot of Mount Kenepai (Büttikofer). — Poelau on the Sibau River (Büttikofer). — Mounts Dadap and Sekedau (Moret). — Sintang (Goedhuis). — Foot of Mount Semedoem (Hallier).

One of the specimens belongs, according to the label, to the implements of a magician, together with species 34; it is very large, measuring 46 mill. in its largest diameter; it has an artificial hole at some distance from the aperture for passing a string. The specimens from the different localities vary much in size.

27. *Cyclophorus kina-baluensis* E. A. Smith.

Smith, Proc. Zool. Soc. London, 1895, p. 118; pl. 4, fig. 1.

Locality: Mount Tiloeng, May 1894 (Büttikofer).

28. *Leptopoma sericatum* Pfeiffer.

Pfeiffer, Proc. Zool. Soc. London, 1851, p. 244. — Martini-Chemnitz, Ed. nov. pl. 40, figs. 7, 8.

Localities: Cavern on Mount Liang Koeboeng, March 1894 (Büttikofer). — Ketoengau District; Mount Dadap (Moret).

29. *Lagochilus bellulus* Martens.

Martens, Preuss. Exped. nach Ost-Asien, Landschn. p. 140; pl. 2, fig. 18.

Locality: Kampoung Boegau in the Ketoengau District (Moret).

A single specimen.

30. *Pterocyclos tenuilabiatus* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 71. — Godwin Austen, Proc. Zool. Soc. London, 1889, p. 339; pl. 35, figs. 4, 4a.

Localities: Southern foot of Mount Kenepai and Smitau

(Büttikofer). — Mounts Dadap and Sekedau (Moret). — Mount Liang Gagang (Hallier).

The specimens from Mount Kenepai are very large, the largest having a diam. maj. of 34 mill. The only one collected by Dr. Hallier is a young specimen.

### 31. *Pterocyclos niahensis* Godwin Austen.

Godwin Austen, l. c. p. 340; pl. 35, figs. 3, 3a.

Localities: Mount Tiloeng, March 1894 (Büttikofer). — Mount Liang Koeboeng, April 1894, and Siniai River, March 1894 (Büttikofer). — Mount Liang Gagang (Hallier).

The number of the spiral ribs and the shape of the aperture seem not to be constant; Godwin Austen (l. c.) mentions a total number of 6 ribs; in the specimens collected during the Borneo-Expedition, the number varies from 10 to 13; however I must confess that some of them are rather obsolete, and may escape notice if the epidermis is well preserved. Godwin Austen has already stated that the shape of the wing of the aperture is variable; in the specimens before me, it is not so much ascending as in the cited figures, even resembling in this respect the figures of *P. cucullus*, fig. 2 of the same plate.

### 32. *Opisthoporus euryomphalus* Pfeiffer.

Pfeiffer, Proc. Zool. Soc. London, 1856, p. 337.

Locality: Mount Tiloeng, March 1894 (Büttikofer).

One large specimen, with the tube slightly nearer to the aperture than is commonly the case.

### 33. *Omphalotropis carinata* Lea.

Lea, Proc. Acad. Philad. VIII, p. 111. — Issel, Molluschi Borneensi, in: Ann. del Mus. Civ. di Stor. Nat. di Genova, vol. VI, 1874, p. 447; pl. 7, figs. 8, 9.

Locality: Pontianak (Moret).

One specimen.

34. *Ampullaria ampullacea* Linné.

Linné, Mus. Ulr. p. 666. — Philippi, in: Martini-Chemnitz, Ed. nov. p. 59; pl. 19, figs. 3, 4. (*celebensis*).

Locality: Poetoës Sibau (Büttikofer).

One specimen, belonging with *Cyclophorus borneensis* to the implements of a magician; it is more eroded, but otherwise agrees with fig. 4 of Philippi, which is a copy of the figure of Quoy & Gaimard; the specimen is provided with a cord through a hole.

35. *Melania Brookei* Reeve.

Reeve, Conch. Icon. fig. 207.

Localities: Southern foot of Mount Kenepai; Poelau on the Sibau River, June 1894, and Smitau (Büttikofer). — Singangi (Moret). — Sintang (Büttikofer).

A large number of specimens, varying in the development of the ribs. Some specimens, having the upper whorls smooth, seem to belong to the variety *sparsimnodosa* v. d. Busch. The specimens from Sintang are very large.

36. *Paludomus conicus* Gray.

Gray, in: Griffith, Animal Kingdom, Mollusca, pl. 14, fig. 5. — Brot, in: Martini-Chemnitz, Ed. nov. p. 26; pl. 2, figs. 12—15; pl. 7, figs. 6, 6a.

Localities: Southern foot of Mount Kenepai (Büttikofer). — Small brooks near Singangi (Hallier).

The specimens are typical, agreeing sufficiently with the original figure.

37. *Paludina sumatrensis* Dunker.

Dunker, Zeitschr. für Malak. 1852, p. 128. — Reeve, Conch. Icon. fig. 65.

Locality: Mouth of the Mandai River, May 1894 (Büttikofer).

A few rather small specimens.

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38. *Paludina Hamiltoni* Metcalfe.

Metcalfe, Proc. Zool. Soc. London, 1851, p. 73. —  
Reeve, Conch. Icon. fig. 37.

Localities: Mouth of the Mandai River, May 1894 (Büttikofer). — Sai River, a branch of the Ketoengau (Moret). — Sintang (Büttikofer).

39. *Clea nigricans* Adams.

Adams, Proc. Zool. Soc. London, 1855, p. 119.

Locality: Sibau River (Büttikofer).

One young specimen.

40. *Unio Velthuizeni*, n. sp.

(Plate 4, fig. 1).

Shell winged, nearly triangular, moderately inflated, very inaequilateral, concentrically striated and folded; umbones rather obtuse, decorticated, consequently no peculiar sculpture visible; epidermis dark brown, if held against the light it is yellow, with numerous green rays; upper margin nearly straight anteriorly, ascending behind; anterior margin meeting the upper one nearly rectangularly, then rounded, passing insensibly into the ventral margin which is long and slightly sinuous; posterior margin passing by an obtuse angle into the ventral, by a distinct angle into the superior one, bent inwards above, straight in the middle, rounded below. Two obtuse angles run from the beaks towards the infero-posterior angle. Posterior slope with concave sides, forming a triangular wing. Nacre iridescent, bluish white; anterior scars irregular, rather small, posterior ones rounded, pallial scar distinct. Hinge not strongly developed, cardinal teeth elongated, obtuse, one in each valve, in the right valve a rudimentary second one; lamellae arcuate, elongated, one in the right, two in the left valve, the uppermost of these latter very obsolete.

Long. 94, alt. near the umbones 42, near the wing 61 mill.; diam. 29 mill.



Locality: Mandai River near Nanga Kalis, February 1894 (Büttikofer).

This shell is very different from any Bornean species. It has a remote resemblance with *U. delphinus* Gruner, but that species is still more elongated, much more winged and less inflated.

41. *Unio infrarostratus*, n. sp.

(Plate 4, fig. 2).

Shell oval, much inflated, very inaequilateral, rather smooth, with only slight wrinkles and numerous fine concentric striae; umbones rather prominent, decorticated; epidermis dark brown with a metallic lustre, somewhat velvety near the extremities; upper margin slightly curved posteriorly, straight anteriorly; anterior margin rounded, passing insensibly in the convex ventral margin; posterior margin oblique above, with an obtuse angle near the superior one; somewhat below the middle of its length it is suddenly bent inwards and then outward again, forming a sinus, in the lower part of which the shell is angular; the margin is then nearly straight and runs with an angle into the ventral one; from these two angles of the margin, obtuse angles run towards the umbones.

Nacre blue, iridescent near the free margins, olive yellow near the umbones; hinge strong, teeth irregular, thick, a crenulated one in the right, two nearly consolidated ones in the left valve; 2 lamellae in the left, one in the right valve; they are well developed, nearly straight. Anterior scars irregular, deep, posterior ones shallow, pallial line distinct.

Long. 67, alt. near the umbones 41, about the middle of the posterior side 47 mill.; diam. 29 mill.

Locality: Small brook near Singangi in the Ketoengau District (Moret).

This species may be distinguished from the other known Bornean species by its posterior margin, and it is easily

recognizable by this character, which makes the inferior part of the posterior margin obtusely rostrate.

42. *Pseudodon aeneolus* Drouet & Chaper.

Drouet & Chaper, Mem. Soc. Zool. de France, 1892, p. 192; pl. 6, figs. 4—7.

Locality: Small brook near Singangi in the Ketoengau District (Moret).

One specimen, agreeing in shape and size with fig. 7 of Drouet, in sculpture with fig. 4, very slight wrinkles being present; this character is, as already stated by the author, very variable in this species.

B. MARINE MOLLUSKS.

A few marine shells were collected by Dr. Hallier, on the shore near Sambas and on Poeloe Lemoekoetan; as they all belong to common species, I only give the names; those which are also from the 2<sup>nd</sup> locality are marked with an asterisc.

1. *Pentadactylus musivus* Kiener.
2. *Cypraca errones* Linné.
3. » *erosa* Linné.
4. *Cerithium tuberculatum* Linné, var. *variëgatum* Quoy & Gaimard.
- \*5. *Cerithium morus* Lamarek, var. *moniliferum* Dufresne.
6. » (*Vertagus*) *asperum* Linné, var. *lineatum* Bruguière.
7. *Planaxis sulcatus* Born.
8. *Nerita striata* Burrow.
- \*9. » *chamaeleo* Linné.
- \*10. » *squamulata* Le Guillou.
- \*11. » *albicilla* Linné.
12. *Trochus maculatus* Linné.
13. *Monodonta labio* Linné.
14. *Turbo ticaonicus* Reeve.
15. *Littorina scabra* Linné, var.; only from Poeloe Lemoekoetan.

Rhoon, near Rotterdam, November 1895.

## NOTE XXIV.

ON THE GENERA UBANIUS SENNA,  
AND PSALOBRENTHUS (SHARP)

BY

**D. SHARP.**

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In Vol. XVI of »Notes from the Leyden Museum» Dr. Senna described some new Brenthidæ, among them *Ubanius wneus* (n. g. and n. sp.) from Central America. The species was characterised from three examples, one male of unknown habitat in the collection of the Brussels Museum, one female from Mexico in the Rothschild Museum, and a second female, said to be from Chiriqui, in Dr. Senna's collection.

At this time my descriptions of the Central American Brenthidæ were completed, but on receiving Dr. Senna's paper I was able by the kindness of the Honorable Walter Rothschild to compare the female of *Ubanius wneus* in his collection with the rich series of Central American Brenthidæ of Messrs. Godman and Salvin that had formed the material for the work since published <sup>1)</sup>. His specimen quite agreed with an insect from Mexico I had described under the name of *Episphales potens*, n. sp. I accordingly suppressed the name I had intended to use, replacing it by that of *Ubanius wneus* Senna.

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1) Biol. Centr.-Amer. Col. IV, part 6.

Since the publication of my descriptions Dr. Senna has written to me telling me that he is of opinion that the insect I described and figured in the work mentioned, under the name of *Psalobrenthus solitarius* from a single individual found in Costa Rica, is the same as his *Ubanius aeneus* ♂, and has kindly sent me his specimen to enable me to compare the two.

I have now before me all the specimens known to exist of the two supposed genera and species (except the Chiriqui female, and that I have also seen previously) and am able to say that Dr. Senna's opinion as to the identity of *Ubanius aeneus* ♂ and *Psalobrenthus solitarius* ♂ is correct. I have also no doubt that *Ubanius aeneus* ♂ and ♀ of Senna are different species. Whether they are different genera cannot at present be decided, owing to the insufficient material not enabling us to compare the sexes of each. We know, in fact, only the male of one and the female of the other, and the genera of Brenthidæ are established almost entirely on the characters of the male.

It thus becomes necessary to decide whether the name *Ubanius aeneus* shall apply to the insect of which we know the male only, or to that of which we know the female only: and I think the application of the name to the male is in this case clearly the correct course.

Under these circumstances the insect described by me as *Ubanius aeneus* is without a name, and I now therefore propose to call it *U. potens*. The type in the collection of Messrs. Godman and Salvin agrees exactly with that in the Rothschild Museum, and with the one in Dr. Senna's collection.

Another female from Belize, British Honduras, from the Rothschild Museum, also communicated to me by Dr. Senna is only about half the size and is somewhat differently sculptured so that it may be either a variety of *U. potens* or a closely allied species.

The synonymy will be as follows:

**Ubanus** Senna.*Psalobrenthus* Sharp.

1. *Ubanus aeneus* ♂, Senna, Notes Leyd. Mus. XVI, p. 222.  
*Psalobrenthus solitarius* Sharp, Biol. Centr.-Amer. Col.  
IV, part 6, p. 41, pl. 2, fig. 10.

*Hab.* Costa Rica.

2. *Ubanus potens* Sharp, nom. nov.

*Ubanus aeneus* ♀, Senna, loc. cit.

*Hab.* Mexico, Chiriqui(?).

var. minor (an species distincta?).

*Hab.* Belize, British Honduras.

Cambridge, Nov. 2<sup>nd</sup> 1895.

## NOTE XXV.

ON MONILIGASTER COERULEUS HORST  
(MONILIGASTER VIRIDIS BEDDARD)

BY

**Dr. R. HORST.**

In my description of this large earthworm from Borneo <sup>1)</sup> I made already the suggestion, that the species probably did not belong to the genus *Moniligaster*, but I preferred to range it provisionally in this genus till we were better informed about the characters of several *Moniligaster*-species, only briefly described by Bourne. Since this author published a detailed account of the anatomy of *Moniligaster grandis* and a dozen of other species of this genus, found in S. India. They all agree in the situation of the oviducal pores between segment XI and XII and in the structure of the prostata. There now remains for me no doubt, that the Borneo-worm, which differs not only by the position of its oviducal pores upon segment XIII, but also by having a totally different prostata, cannot belong to the genus *Moniligaster*, but must be ranged in an other genus, for which I propose the name of *Polygaster*.

I think that the *Moniligaster viridis* from Serawak, afterwards described by Beddard in his Monograph of the Oligochaeta, p. 203, will prove to be identical with our *Polygaster coeruleus*.

Leyden Museum, December 1895.

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1 Notes Leyden Museum, Vol. XVI, 1895, p. 137, pl. 7.

## NOTE XXVI.

## ON THE NEST OF PITECHEIR MELANURUS

BY

**Dr. F. A. JENTINK.**

(November 1895).

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Our correspondent Mr. J. D. Pasteur is such a passionate naturalist, that he had no rest before he procured a nest of the black-tailed, red Tree-Rat. A specimen of the kind has been presented by that gentleman to our Museum and is at present exhibited in a glass case.

This globulous nest has a diameter of 18 cm., the entrance, placed sideways, a diameter of about 6 cm. It has nicely been constructed of small branches with leaflets and parts of large leaves.

For further details I translate here a part of Mr. Pasteur's letter to me:

»The nest has been found in the thick wood about 4 meters above the ground between the branches of a young *Koppe*-tree — *Jambosa densiflora* D. C. — one of the numerous Indian wild *Djamboe*-species, with small fruits eatable to birds and other animals. The nest inside is clothed with rugged leaves, outside with moss and looks quite like a birds nest. The branch should be placed in a slant direction and a little turned so that the opening of the nest stands nearly vertical.”

»I observed that these animals kept in confinement are very fond of bread and pulp of ripe coffee-beans. For the

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rest I have to add to my former informations (Notes Leyden Museum, 1892, p. 123) merely the following observation, namely that by having now found the nest only some meters above the ground, I suspect that the native told lies when he reported (N. L. M. 1892, p. 123) that he observed one of the red Rats running upon a branch of a high *Rasamala*-tree: probably the native said that solely in order to exaggerate the trouble spend in catching the animal as much as possible, and at the same time to discourage the other natives crowded together on that occasion. Under such circumstances it is very difficult to obtain trustworthy details from the natives: it is quite the same thing as with the informations concerning trees upon which rare Insects have been collected, the natives fearing that others may frequent their hunting-ground."

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## NOTE XXVII.

## ON PHASIANUS IGNITUS AND ITS NEAREST ALLIES

BY

**Dr. J. BÜTTIKOFER.**

While working out the ornithological results of the Dutch expedition to Central Borneo, I had to decide which name to bestow upon the Bornean Crested Fire-back, generally known as *Euplocamus nobilis* Sel., but afterwards united with *E. ignitus* Lath. by Elliot (Ibis 1878, p. 414), and lately also by Ogilvie Grant in his Catalogue of the Game Birds in the British Museum.

A comparison of the Bornean specimens in the Leyden Museum with our very interesting other representatives of the Genus<sup>1)</sup> convinced me that we have to acknowledge not only two, as Elliot (l. c.) proposes, but four well-defined species, as will be fully explained hereafter in the key to the species.

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1) Mr. Grant has, for reason of priority, substituted the generic name *Euplocamus*, under which the group is generally known, by the older name *Lophura* Fleming. Under the genus *Lophura* Mr. Grant comprises the Fire-backed Pheasants with a black crest on the head, including *L. Diardi* from Siam and Cochin China. For the sake of convenience I propose, however, to restrict the generic name *Lophura* to the crested Fire-backs with blue face and white or fulvous centre tail-feathers. *Lophura Diardi* differs so strikingly from the other Fire-backs, that it had never been mixed up with the synonymy of the latter. It has the naked parts of the head red instead of blue, and the tail of the male is entirely black. Moreover is the modus of coloration of the plumage, in the male as well as in the female, so thoroughly different, that there is more than sufficient reason to separate it generically under the name of *Diardigallus* Bp.

## KEY TO THE SPECIES (MALES).

- a. Four central tail-feathers fulvous.
  - a'. Breast black, only the flanks chestnut, varied with black . . . . . *ignita*.
  - b'. Breast and flanks uniform chestnut. . . . . *nobilis*.
- b. Four central tail-feathers white.
  - a'. Flanks and more or less also the breast chestnut, varied with black . . . . . *sumatrana*.
  - b'. Flanks steel-blue or black, with white shaft-streaks . *Vieilloti*.

## DOUBTFUL REFERENCES.

- Fire-backed Pheasant* Lath. Gen. Syn. Suppl. II, p. 274 (1801), Java? <sup>1)</sup>.  
*Phasianus rufus* (♀) Raffles, Trans. Linn. Soc. XIII, p. 321 (1822), Sumatra <sup>2)</sup>.  
*Sumatran Pheasant* Lath. Gen. Hist. VIII, p. 204 (1823), Sumatra <sup>3)</sup>.  
*Phasianus ignitus* Gray in Griffith' ed. Cuv. III, p. 30 (1829), Sunda Isl. <sup>4)</sup>.  
*Phasianus rufus* » » » » » » » 28 » Loc.? <sup>5)</sup>.  
*Houppifer ignitus* Guérin Méneville, Icon. Règ. Anim. Ois. pl. 43, f. 3 (1829—38) <sup>6)</sup>.  
*Euplocamus ignitus* Gray, List Spec. Birds Br. Mus. III, Gallinae, p. 26, with the exception of specimen *a*, which belongs to *L. sumatrana* (1844).

1. *Lophura ignita*.

*The Fire-backed Pheasant* Staunton, in Macartney's Embassy to China, I, p. 79, pl. XIII (1797).

1) In this description mention is made of the red flanks, but nothing is said of the central tail-feathers. It is probably based upon that given by Shaw and Nodder in Nat. Misc., and in this case it would be *Ph. ignitus*.

2) A doubtful synonym, based upon the hen of either *L. Vieilloti* or *L. sumatrana*.

3) See the preceding note.

4) Sides spotted, color of central tail-feathers not stated.

5) Description based upon a female.

6) Fig. 3 on pl. 43 represents only the head of a *Lophura*, but as the heads do not possess any distinctive character in this genus, it is impossible to say which species is represented by the figure. In the letterpress, p. 26, nothing is said of the mentioned figure of the head, but fig. 2 of the same plate represents a bird which is wrongly called *Houppifer Diardi*, and which the author suggests to be the young of *Houppifer ignitus*, while in reality it represents, together with the accompanying description, the adult male of *Acanus erythrophthalmus*. This is the same mistake which is made by Temminck in Vol. II, p. 279, of his Pigeons et Gallinae.

Notes from the Leyden Museum, Vol. XVII.

*Phasianus ignitus* Shaw and Nodder, Nat. Misc. IX, pl. 321 (about 1800); Lath. Ind. Orn. Suppl. p. LXI (1801).

*Gallus Macartneyi* Temm. (part.) Pig. et Gall. II, p. 273 (1813) and III, p. 663 (1815); Steph. in Shaw's Gen. Zool. XI, p. 218 (1819); Schinz (descr., nec tab. 93), Naturg. und Abb. d. Vögel, p. 248 (1833); id. (letterpress, nec tab. 70), Naturgesch. d. Vög. p. 147 (1853).

*Lophura ignita* Flem. Philos. of Zool. II, p. 230 (1822).

*Macartneya Macartneyi* Less. Traité d'Orn. p. 493 (1831).

*Gallus ignitus* Vieill. (part.) Gal. Ois. II, p. 29, nec pl. 207 (1834).

*Gallophasis ignitus* G. R. Gray, Gen. B. III, p. 498 (1845).

*Macartneya ignitus* (part.) Reichenb. Synopsis Avium, pl. CCXXXIX, fig. 2029 (1848).

? *Euplocamus sumatranus* (♀) Dubois, Bull. Acad. Belg. (2) XLVII, p. 825 (1879) <sup>1</sup>).

Adult male. General color black, the short feathers on head and chin without any gloss; crest, whole neck, mantle, scapulars, upper tail-coverts, throat, chest and upper breast glossy purplish blue, this color covering the exposed terminal part of the feathers, while the hidden basal part is dull black. Lower back and rump glossy fiery bronze; lower breast black, the feathers margined and more or less broadly tipped with steel-green; abdomen, vent, thighs, under wing- and under tail-coverts sooty black with scarcely any metallic gloss; feathers of the flanks black, the exposed parts of them steel-green or steel-blue, which color is, to a greater or lesser extent, substituted by a space of pale rusty yellow. On some feathers this latter color covers the whole terminal part, on others it only forms a more or less broad rhomboid patch, which is flanked or even entirely surrounded by steel-green or steel-blue. On all these feathers the rusty space is lengthened along the shaft towards the base in the form of a wedge. The rusty yellow spaces may not be identified with the rusty shaft-streaks found on the flanks in young specimens of *L. Vieilloti*, as they in reality make the im-

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1) The black-tailed female here described and said to have been obtained in Sumatra, might possibly belong to the present species.

pression of being the predominant color of the flanks, which is never the case with the narrow shaft-streaks in the latter species.

The wings are sooty black, the outer webs of the primaries earthy brown, the upper wing-coverts broadly tipped with steel-blue with a greenish gloss under a certain light. Tail strongly graduated, the outermost pair being the shortest, the second from the centre the longest. The six outermost pairs are entirely sooty black and straight, the two innermost strongly bent outward, respectively downward, when the tail is laterally compressed as in the genus *Gallus*, and uniform fulvous or havannah-color. Iris red, bill horny white, wattles and bare space covering the whole sides of the head smalt-blue, feet red. Wing 28 cm., outermost tail-feathers 11, innermost 23, tarsus 10,5, culmen 3,5.

Adult female. There is no authentical female known of this species, but it may be expected that the females of both species, in which the centre tail-feathers of the males are fulvous instead of white (*L. ignita* and *L. nobilis*), will be characterized by black tail-feathers. As *L. nobilis* is unknown in Sumatra, we may suppose that Sumatran females with black tail-feathers will belong to this species.

At present I know only three black-tailed female specimens being recorded as obtained in Sumatra, namely the female described by Dubois under the name of *Euplocamus sumatranus*, in the Museum at Brussels, and two specimens making part of the collections of the Zoological Garden at Amsterdam, kindly lent me, together with all the other *Euplocamus*-specimens in its possession, by the Director, Dr. Kerbert. Unfortunately in none of these three specimens the mentioned habitat may incontestably be depended upon, the first having probably been obtained, as I am informed by Dr. Dubois, from Major Henrici, who has also collected in Borneo, while the two latter have died in the Garden at Amsterdam and are only supposed to have been brought from Sumatra.

The black-tailed female at Brussels is described by Dubois as follows: Lively red, darker on the upper surface than on the lower, upper wing-coverts, secondaries and upper tail-coverts vermiculated with brown; throat whitish, the feathers on neck and upper breast more or less edged laterally with white, the red feathers on the rest of the lower surface entirely margined with white; under tail-coverts black, tipped with brown; tail-feathers black.

According to Dr. Dubois, this bird (the female type of his *Euplocamus sumatranus*) differs from the female of the allied Bornean species, *L. nobilis*, in having the centre of the feathers on breast, abdomen and flanks lively red instead of sooty brown, and in having the brown vermiculations on lower back and wings less strongly pronounced than in the latter species. In fact one of the two birds in the Amsterdam collection, said to come from Sumatra, fully agrees with that at Brussels, while the other has the feathers on the lower surface black instead of red. This latter specimen differs moreover from all our black-tailed females in having the two innermost pairs of tail-feathers rufous like in the female of *L. Vieilloti*, and the next pair rufous on the inner, black on the outer web, while all the black tail-feathers are very conspicuously tipped with rufous. The feathers on throat and chest are black with white lateral edges and a not very broad chestnut-brown terminal bar, so that throat and chest are making the impression of being black, barred with chestnut, while in all our Bornean specimens the red is the principal color of the chest, the black being reduced to the basal part of the feathers.

As to the red centres on the feathers of breast and flanks, said by Dubois to form the distinguishing character by which this species is unvariably known from the black-breasted *L. nobilis*, I cannot consider it as very trustworthy, as the Leyden collection contains a black-tailed female from Borneo in which the sooty black feathers on breast and flanks are very broadly barred across with rufous on their

terminal half. Amongst the red-tailed females there is also a rufous-breasted form represented by a specimen in the collection at Amsterdam. I am unable to say whether this red color on breast and flanks means merely an individual variation or a certain stage of development in the plumage of these birds. And if the latter would really be the case, which of both, the red or the black, will represent the fully developed plumage of the adult female?

There are, in reality, not two of the numerous females, even from the same locality, one alike the other, and much more authentical material must be gathered, before we can decisively settle that difficult question.

Habitat. Unknown.

The only specimen of this species, at present known in any Museum, is the above described adult male, which has already made part of Temminck's old private collection before the foundation of the Leyden Museum. It bears, underneath the stand, in Temminck's own hand-writing the name »*Lophophorus Macartneyi*, Chine''. There can be little doubt that this specimen is the type of Temminck's description of the adult male of his *Houppifer* (*Gallus*) *Macartneyi* in Fig. et Gall. II, pp. 275—277. Taking in consideration the abnormal shape of its extraordinarily large and blunt spurs, it must have been kept in captivity, and this having also been the case with Macartney's bird, which, as we learn from Staunton, has been brought from Batavia to England and examined by Shaw, I thought a moment that our bird might be the type of Staunton's and Shaw's, and also of Latham's (Suppl. Ind. Orn.). Macartney's bird, however, had a mutilated tail, while our specimen has not, consequently this latter must have another origin.

Another specimen very likely belonging to this species, is a live male in the Zoological Garden at Amsterdam. It has the breast black and the flanks chestnut-brown like in *L. sumatrana*, thus somewhat darker than in our above described *L. ignita*. The central tail-feathers are of a some-

what paler fulvous than in our bird. It is not known where the bird has been brought from.

## 2. *Lophura nobilis*.

*Euplocamus ignitus* S. Müll., Verh. Land- en Volkenk. p. 376 (1839—44); Low, Sarawak, p. 411 (1848); Elliot, Ibis 1878, p. 414 (conclusion); Sharpe, Ibis 1879, p. 270; Pelz. (part.) Verh. Z. B. Ges. Wien, XXIV, p. 531 (1880); Sharpe, P. Z. S. 1881, p. 800; Nicholson, Ibis 1883, p. 90; Elliot, Auk, VIII, p. 15 (1891); Hose, Ibis 1893, p. 422.

*Euplocamus nobilis* Scat., P. Z. S. 1863, p. 119, pl. XVI; id. List of Phas. p. 7 (1863); Gray, List of Gallinae Br. Mus. p. 35 (1867); Scat. P. Z. S. 1868, p. 261; Gray, Hand-List B. II, p. 259 (1870); Elliot, P. Z. S. 1871, p. 138; Elliot, Phas. pl. XXVII (1872); Wald. Ibis 1872, p. 382; Salvad. Ucc. Born. p. 306 (1874); Scat. P. Z. S. 1875, p. 380; Sharpe, Ibis 1879, p. 234; Scat. Ibis 1880, p. 371; Guillemard, P. Z. S. 1885, p. 416; Everett, List of Birds Born. p. 199 (1889); Scat. Ibis 1894, p. 310; Remy Saint-Loup, Ois. des Parcs, p. 313, f. 41 (1896).

*Lophura ignita* Grant, Cat. B. Br. Mus. XXII, p. 288 (1893); Sharpe, Ibis 1894, p. 544.

Adult male. Similar in size and color to the preceding species, with the following exceptions: The metallic color on the lower back and rump constantly and very strikingly darker, rather dark coppery bronze; a very broad band, covering the lower breast, upper abdomen and entire flanks, uniform fiery bronze-red, the terminal half of each feather, with few exceptions, being entirely of that color, without any black markings. In most of the specimens the broad cross-band is interrupted from behind by the exposed centre of the belly which is black, but never is the band entirely divided by the latter color. The red color of the cross-band on the breast is much darker and more glossy than the flanks of *L. ignita* and very much like the color of the lower back and rump of the latter species. The color of the centre tail-feathers does not differ from that found in *L. ignita* and is generally more widely distributed, as in some specimens not only the innermost and second,

but even the third pair of centre tail-feathers are more or less, or even entirely, rusty fulvous. In one of our specimens from Banka the third pair is entirely rusty fulvous, and also the inner web of the fourth pair. I can hardly believe that this greater extent of the fulvous color is due to the more advanced age of the bird, this specimen having the chin white like the female instead of black and is, therefore, by no means a very old bird. Eye red, naked skin on the sides of head blue, bill horny white, feet red. Wing 26 cm., tail 21—23, tarsus 10—11, culmen 3—3.5.

Adult female. Whole upper surface, throat and chest chestnut, the fore-neck and in some specimens also the hind neck, with white lateral edgings to the feathers. These white edgings are also found on the chest, on which, moreover, some black spots are visible, produced by the sometimes not fully hidden large basal part of the feathers, which is black. Back, rump, upper wing- and tail-coverts like the hind neck and mantle, or even darker, with narrow black vermiculations, which are rather faint on back, scapulars and lesser wing-coverts, but very much stronger on rump and upper tail-coverts. Quills sooty black, the outer webs of the primaries uniform earthy brown, of the secondaries vermiculated with rusty brown; wing from underneath and under wing-coverts slaty gray; tail-feathers black, the two innermost pairs strongly vermiculated with rusty brown. Entire breast, flanks, abdomen and thighs sooty black and broadly margined and tipped with white. In some feathers, especially on the flanks and thighs, the black centres are in a more or less degree vermiculated with brown near the tip. In one of our Bornean specimens these brown vermiculations are very broad and not only found on the feathers of the flanks, but also on the breast. In this specimen the white margins are almost entirely restricted to the lateral edge of the feathers. The lower abdomen in all our female specimens is nearly pure white, the hinder flank-feathers and under tail-coverts



are always black with rather broad chestnut-brown terminal edge. The feathers on chin and upper throat are white with more or less large chestnut tips. The eyes and naked parts do not differ from those of the male, with the exception of the feet, which are wax-yellow. Wing 23—25 cm., tail 17, tarsus 8,5, culmen 3—3,5.

Habitat. Borneo (spread over the whole island) and Banka.

In possession of the Leyden Museum are the following specimens.

From Borneo: Adult male, Doeson, Barito River (S. Müller); adult male, Pleyharie, South Borneo (Semmeling 1867); adult male, Borneo (Coll.? 1875); adult male and female, West Borneo (Teysmann 1878); adult female, Mount Kenepai, West-Borneo (Büttikofer 1893).

From Banka: Adult male (Teysmann 1872); adult male and female (Vosmaer 1872). The Banka specimens cannot be distinguished in any respect from those from Borneo.

### 3. *Lophura sumatrana*.

*Fire-backed Pheasant* Lath. Gen. Hist. VIII, p. 184 (1823) »Malay coast«.

*Gallus ignitus* (part.) Vieillot, Gal. Ois. II, p. 29, nec pl. 207 (1834) »Sumatra«.

*Euplocamus ignitus* Jard. Nat. Libr., Orn. III, p. 214, ? pls. XIX and XX (1836); G. R. Gray, List of Spec. of Birds, III, p. 26 (1844) (as far as specimen *a* is concerned); Sclater (nec Latham), P. Z. S. 1863, p. 119; id. Ibis 1894, p. 310.

*Euplocamus Vieilloti* ~~×~~ *nobilis* Elliot, Ibis 1878, p. 411.

*Euplocamus sumatranus* Dubois, Bull. Ac. Belg. (2) XLVII, p. 825 (1879)<sup>1)</sup>; von Pelz. Verh. zool. bot. Ges. Wien, XXIX, p. 531 (1880); id. Vorderman, Nat. Tijdschr. Ned. Ind. XLIX, p. 98 (1890).

*Lophura sp.* Grant, Cat. B. Br. Mus. XXII, p. 289, footnote (1893).

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1) Dubois has described an adult male and female as belonging to this species, but the female having the tail black and it being not out of doubt that it really has been brought from Sumatra, I consider it, on account of its black tail, as belonging to either *L. ignita* or *L. nobilis* (see the synonymy of *L. ignita*, antea p. 171, and text, p. 173).

Adult male. Similar in color to *L. ignita*, with the exception of the centre tail-feathers, which are pure white with a faint ochrous tinge on the basal part as far as it is hidden by the upper tail-coverts. In one of the two specimens in the Leyden Museum only the innermost pair are pure white, while the second are only white on their inner web; in the other specimen the two innermost pairs are entirely white, as also the inner web of the third pair. The red color of the feathers on the flanks is darker than in *L. ignita*, but a trifle lighter than in *L. nobilis*, and extends more or less over the sides of the breast, but never covers this latter entirely as is the case with *L. nobilis*. Iris red, naked skin on the sides of the head blue, bill horny yellow, feet red. Wing 27,5—28,5 cm.; outermost pair of tail-feathers 14, longest 24,5; tarsus 11; culmen 3,8.

Adult female (after the description of Dr. Vorderman's in Nat. Tijdschr. Ned. Ind. 1890, p. 100). Above reddish brown, uniform on head and neck, vermiculated with black on the rest; feathers on the fore-neck reddish brown, edged on both sides with white, on the chest black, edged with white and narrowly tipped with reddish brown; feathers on breast and flanks black with broad white margins, on the hinder part of the flanks dull black with indistinct brown and white edgings. The predominant color on the abdomen is white, here and there interrupted by fulvous black spots; thighs black with white edgings to the feathers; under tail-coverts black with brown terminal shaft-spots and brown edgings; tail-feathers chestnut-brown with black vermiculations on the central pairs. Iris red, bare space on the sides of the head blue, bill dark, lower mandible light horn-color, feet pale flesh-color. Wing 25,5 cm.; tail 15,7; tarsus 8,2; culmen 3,5.

Habitat. Residency of Palembang, South Eastern Sumatra.

The Leyden Museum is in possession of two fully adult males of this species. One of them is, with regard to its stuffing, of a very early date and bears in Temminck's handwriting the name *Lophophorus Macartneyi*, though no

red-flanked bird with white centre tail-feathers is mentioned in his »Pigeons et Gallinacés". There is no locality mentioned for this specimen. The other specimen is very valuable as we know with certainty that it was obtained near Moeara Dua, Komering, Residency of Palembang, by Mr. G. C. van Schuylenburch, Assistant Resident at Komering, who sent the skin to the International Exhibition at Amsterdam in 1883 and afterwards presented it, together with a number of other bird-skins from the same district, to the Leyden Museum.

A third specimen which I am inclined to reckon to this species, especially on account of the ochrous hue on the basal part of the white centre-tail-feathers, is a bird with abnormal plumage, making part of the above mentioned collection of the Zoological Garden at Amsterdam. This bird, a splendid adult male, differs from the normal form in having the feathers on the flanks white instead of red, this latter color being restricted to bronzy red inner edgings on the innermost and ditto tips to the hindmost white flank-feathers. This predominant white color has, in this case, to be considered as albinisme. On the other hand the possibility is not excluded that the bird in question, which had been kept in captivity, might be a hybrid between *L. sumatrana* and *L. Vieilloti*.

The typical male specimen of this species is preserved at the Royal Natural History Museum at Brussels. This bird which I had lately the opportunity to examine, together with the black-tailed specimen described by Dubois as the female of this species (see antea, pp. 171 and 173) is in every respect similar to the two specimens in the Leyden Museum. The rufous color on the flanks is by no means restricted to shaft-streaks, and therefore this species is wrongly ranged in the synonymy of *L. rufa* sive *Vieilloti* by Mr. Grant (Cat. B. Br. Mus. XXII, p. 287, foot-note). The ochrous hue on the hidden basal portion of the white tail-feathers is strongly developed, and therefore Dr. Dubois suggests that this is the original color of

the centre tail-feathers, and that the white of the exposed parts is the result of the bleaching influence of the light. This is the reason why Dr. Dubois has used the expression: »Queue noire, les quatre rectrices médianes d'un blanc roussâtre, la barbe interne de la paire suivante également d'un blanc roussâtre" (Bull. Ac. Belg. (2) XLVII, p. 825).

Another specimen, fully agreeing with the type and our two Leyden specimens, is preserved in the Imperial Zoological Museum at Vienna. It was obtained in exchange from the Leyden Museum and is said to be brought from Sumatra (see von Pelzeln, Verh. 1880, p. 531). At last there must be put in remembrance, as undoubtedly belonging to this species, the specimen in the British Museum, mentioned by Mr. Grant in Cat. XXII, p. 289, foot-note, under the name *Lophura sp.*, with the following short but quite sufficient description: »Resembles the male of *L. ignita* (our *L. nobilis*), but differs in having the feathers down the centre of the lower breast and belly entirely black, those on the sides margined or largely mixed with black, only the central part in some being rufous chestnut, and the central tail-feathers are white." This is the same bird described by Dr. Sclater in P. Z. S. 1863, p. 119, under the name of *Euplocamus ignitus* in the following terms: »Niger, purpureo splendens, dorso imo igneo-ferrugineo, lateribus pallide castaneis, nigro variis: rectr. 4 mediis albis. Hab. probably Sumatra." This specimen is said to be sent by Mr. Reeves from China; it looks as having been kept in captivity.

An ample description of this species (male and female) is published under the name of *Euplocomus sumatranus* by Dr. Vorderman (l. c.), who had received the birds alive from Palembang, the same locality where our specimen presented by Mr. van Schuylenburch had been obtained. The female specimen had the tail red. As we may be sure that male and female obtained at the same place will belong to the same species, the female of *L. sumatrana* has the tail red, and the black-tailed female described by

Dr. Dubois as belonging to his *E. sumatranus* must belong to either *L. nobilis* or *L. ignita*, whenever the female of this latter species might turn out to have a black tail.

The above mentioned live birds had probably been caught in the forest and not bred in a poultry-yard, as the author tells us that at the beginning they were very shy, that the female very soon died and that after a while the male became more tame. We may thus freely reject the supposition that this bird must be considered a hybrid, as Elliot says of Reeves' bird, between *E. ignitus* (sive *nobilis*) and *E. Vieilloti*.

#### 4. *Lophura Vieilloti*.

*Gallus Macartneyi* (part.) Temm. Pig. et Gall. II, p. 277 (1813)<sup>1</sup>;  
Schinz, Nat. u. Abb. d. Vög. (nec letterpress on p. 248), pl. 93  
(1833); id. Naturg. d. Vög. (nec letterpress on p. 147), pl. 70  
(1853).

*Phasianus ignitus* Raffl. Trans. Linn. Soc. XIII, p. 320 (1822); Vieill.  
Tabl. Encyclop. Méth., Ois. pl. 237, f. 2 (1823).

*Phasianus castaneus* Gray in Griffith' ed. Cuv. III, p. 28 (1829)<sup>2</sup>.

*Gallus ignitus* (nec descr.) Vieill. Gal. Ois. pl. 207 (1834).

*Euplocamus ignitus* J. E. Gray, Illustr. Ind. Zool. II, pl. 39 (1834);  
Blyth, Cat. Mus. As. Soc. p. 243 (1849); G. R. Gray (part.),  
Hand-List, II, p. 259 (1870); Elliot (part. synonym.) Mon. Phas. II,  
pl. 26 (1872); Blyth and Wald. Cat. Mamm. a. Birds Burma, p.  
149 (1875).

*Euplocamus Vieilloti* G. R. Gray, List Specim. Birds, III, p. 26  
(1844); Gould, B. As. VIII, pl. 15 (1852); Sclat. P. Z. S. 1863,  
p. 118; Sclat. and Wolf, Zool. Sketches, 2, pl. 36 (1867); Gray,  
List Gallinae, p. 35 (1867); Schleg. Jaarb. K. Zool. Gen. Nat. Art.  
Mag. Amsterd. 1869, p. 133 (with plate); G. R. Gray, Hand-List,  
II, p. 259 (1870); Hume, Str. F. II, p. 481 (1874), id. id. III,  
p. 324 (1875); Sclat. P. Z. S. 1875, p. 380; Hume, Str. F. V,  
p. 119 (1877); Hume and Marsh., Game B. Ind. I, p. 213, pl.  
(1878); Elliot, Ibis 1878, pp. 124 and 414; Hume and Davison,  
Str. F. VI, p. 438 (1878); Wardlaw Ramsay, P. Z. S. 1880, p.

1) Only the bird described as a variety with white-striped flanks and white central tail-feathers.

2) Based upon a female, evidently of *L. Vieilloti*, Penang being stated as its habitat.

15; von Pelz. Verh. zool. bot. Ges. Wien, XXIX, p. 532 (1880); Kelham, Ibis 1881, p. 532; Oates, B. Burmah, II, p. 320 (1883); Müller, J. f. O. 1885, p. 160; Vorderman, Nat. Tijdschr. Ned. Ind. XLIX, p. 101 (1890); Hagen, Tijdschr. Aardrijksk. Genootsch. Amst. 1890, p. 163; Scat. Ibis 1894, p. 311; Remy St.-Loup, Oiseaux des Parcs, p. 310 (1896).

*Gallophasias Vieilloti* G. R. Gray, Gen. B. III, p. 498 (1845).

*Macartneya Vieilloti* Reichenb. Syn. Av. Gallinacea, pl. 239, figs. 2031—33 (1848).

*Euplocamus rufus* Hume, Str. F. V, p. 121 (1877).

*Lophura rufa*<sup>1)</sup> (part.) Grant, Cat. B. Br. Mus. XXII, p. 286 (1893).

Adult male. Differs from the preceding species in having the flanks glossy blue with pure white shaft-streaks, very strongly contrasting with the glossy blue lower surface. The two innermost pairs of tail-feathers are pure white with the exception of the extreme base which is black; on the next pair the inner web only is white, or white with black markings. Iris red, bare space of the face blue, feet red, especially the front of the tarsi. Wing 27—28 cm., shortest (outermost) tail-feathers 13, longest 26; tarsus 10—11; culmen 4.

Immature male. A very interesting stage of plumage is represented by a specimen making part of the collection in the Zoological Garden at Amsterdam. The general color of this bird is black, but the feathers on crest, neck, mantle, upper back, scapulars, lesser wing-coverts, throat, chest and partly also of the flanks have already assumed the steel-blue gloss of the adult stage. On the lower back and rump many of the feathers show the full color of the adult, being black at the base and broadly tipped with

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1) I cannot agree with Mr. Grant in adopting, on account of its priority, this name for the present species. The name *Phasianus rufus* is bestowed by Raffles upon a female, obtained by his collectors "in the Island of Sumatra and its vicinity". The same collectors also obtained an incontestable male of *L. Vieilloti* which is described by Raffles under the name of *Phasianus ignitus*, and therefrom we might conclude that both birds must belong to one and the same species. There is, however, no absolute certainty that both specimens have been found together in the same locality, and the descriptions of Raffles' suiting *L. sumatrana* ♀ of Vorderman's as well, I placed it under the doubtful references.

bronze-brown, while others are black at the base and rufous with brown vermiculations on the terminal half, upon which the bronzy gloss begins to make its appearance. The same change of color without moulting can be observed on the upper tail-coverts, which at first are becoming entirely black and afterwards glossy steel-blue at the tips. Most of the quills have already assumed the black color of the adult stage, while others are brown with black vermiculations like in the female, a few others are in a transitional stage, having partially assumed the black color of the adult. The innermost pair of tail-feathers are pure white with black shafts, the next pair like the innermost, but narrowly fringed on both webs with black on the basal half; of the third pair only the inner web is white with black edging, while the outer web is black like the rest of the tail-feathers and has a rufous tip. The lower surface is black. The white edgings to the feathers, very broad in the female and young male, are in our specimen reduced to very narrow fringes or have entirely disappeared and are substituted by the steel-blue gloss of the adult male. Some of the feathers on the flanks are already more or less broadly tipped with steel-blue and show narrow white shaft-stripes which are varied with rufous. The under tail-coverts are uniform dull black without any glossy blue tips, which latter are very conspicuous in the fully adult bird. The spur is but feebly developed.

Another immature male in a similar but somewhat more advanced stage of plumage, belongs to the collections of the Leyden Museum. It has the white shaft-stripes on the flanks more developed, but still slightly tinged with rufous.

Adult female. I am unable to find any essential difference between the females of this and the preceding species. Both have the tail-feathers uniform rusty brown with sooty black vermiculations on the two central pairs, and the hind part of the upper surface is paler than the mantle and strongly vermiculated with sooty brown.

Our Museum collections contain three red-tailed females

which belong to this or eventually to the preceding species. One of them, said to come from British India, has chin and upper throat rusty fulvous and the feathers on fore- and hind neck and on the mantle edged on both sides with white. The feathers on the lower surface are extremely broadly margined with white, giving this part an obviously white appearance. In fact the central spots are so small and almost reduced to broad shaft-streaks on breast and flanks, that the white color is much predominant. In a specimen from Sumatra, also making part of the Leyden Museum, the chin and upper throat are pale rufous and the breast and flanks sooty brown with broad white edgings; only few white stripes are seen on the mantle.

Another specimen with a red tail has chin and upper throat rusty white and the centres to the feathers on breast and flanks black; very few white stripes are seen on the mantle. This bird is labelled »S. Müller, Borneo'', but though the British Museum is also in possession of a red-tailed female said to be from Borneo, the statement of this locality might possibly be erroneous, and the bird in question will belong to either *L. sumatrana* or *Vieilloti*.

Moreover I have before me two red-tailed females which had been kept alive in the Zoological Garden at Amsterdam and of which the place of origin is unknown. Both have chin and upper throat pure white and the hind neck and mantle uniform chestnut-brown. In one of these two specimens the feathers on the whole lower surface, with the exception of the pure white abdomen and vent, are chestnut-brown without any blackish spots, and broadly edged in the usual way with white, with the exception of the under tail-coverts which are uniform chestnut-brown. The other specimen is like the former but has the centres of the feathers on breast and hind flanks tinged with sooty brown.

Amongst the five red-tailed females before me, there is not one like the other, but I am entirely at a loss whether to declare these differences to be individual or geographical, or due to the age of the birds.



**Habitat.** This species seems to be the only representative of the genus on the continent, where it is found in Siam, Tenasserim and the whole Malay Peninsula with the inclusion of Salanga and Penang. Moreover it is found in Western and Northern Sumatra (Carl Bock, Highlands of Padang, and Dr. Hagen, Deli).

The following specimens of this species are making part of the collection in the Leyden Museum: An adult male from Tenasserim, of a very early date; an adult male having been kept in captivity and after its death presented to the Museum by Mr. J. N. Blaauw at Ryswyk (Holland) in 1885; a younger male, having not quite assumed the plumage of the adult, Sumatra, 1858; a female from the continent; another female, probably also belonging to the present species, Sumatra, 1858. Moreover I have had the good fortune of comparing two adult males, an immature male, above described, and two females, all said to come from Tenasserim, which five specimens are making part of the bird-collection at the Zoological Garden at Amsterdam.

CRITICAL REMARKS ABOUT THE LITERATURE HITHERTO  
PUBLISHED ON THIS SUBJECT.

As we learn from the much entangled synonymy of the different species, the literature of this genus has quite a history, and it is not without interest to trace it by a short review of the more important publications upon this subject<sup>1)</sup>, the more as this review will explain how I arrived at the standpoint of acknowledging four different species instead of only two (Elliot and Grant) or three (Selater).

The first species of this genus was published by Sir George Staunton in Macartney's »Embassy to China'', under the name of *Fire-backed Pheasant*. The bird in question,

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1) Unfortunately the literature on this subject is rather incompletely represented in our Dutch libraries and I am, therefore, much indebted to Dr. P. L. Selater, Dr. R. Bowdler Sharpe and Prof. Th. Studer for kindly furnishing me with extracts from publications which I was unable to consult myself.

a specimen with a mutilated tail, had been presented to Lord Macartney, the British Ambassador in China, during his visit to Batavia. Unfortunately we do not learn where this bird, which had been kept in a menagery at Batavia, had come from, and it is far from probable that Java should be the habitat of this species.

As I was not able to consult Staunton's work myself, Dr. Sharpe kindly furnished me with a copy of the original description, which begins as follows: . . . »The Ambassador's host had a very curious collection in the several departments of Natural History. He made presents to his guests of several specimens. Among them was a beautiful pheasant, which on being sent to England and shewn to a gentleman of acknowledged eminence in all branches of zoology, Doctor Shaw of the British Museum. He was of opinion that this superb pheasant was a bird which, from every examination of the writers on ornithological subjects, appeared yet undescribed." After a long and somewhat confuse description, from which we learn that the specimen had a very mutilated tail, its essential characters are resumed as follows: »It may be called the fire-backed pheasant, and its essential characters may be delineated in the following terms: black pheasant with a steel-blue gloss: the sides of the body rufous: the lower part of the back fiery ferruginous, the tail rounded; the two middle feathers: pale yellow brown."

From this we may conclude that the bird in question with fulvous central tail-feathers had only the flanks red and therefore cannot be identified with the red-breasted *L. nobilis*.

A few years afterwards, about 1800, Shaw and Nodder, in Nat. Misc. pl. 321, unquestionably described the same specimen under the name of *Phasianus ignitus*. They describe »the sides of the body rufous, the two middle tail-feathers yellowish brown". On the plate the central tail-feathers are represented as cinnamon or pale chestnut.

The same bird again is, under the name of *Fire-backed Pheasant*, the subject of a description in Latham's General Synopsis of Birds, Suppl. II, p. 274 (1802), but here are only the flanks stated to be red, and nothing is said about the color of the tail, which was, as Latham says, »mutilated, so as to make it impossible to ascertain of what length it had been originally."

Somewhat later, in his Supplementum Indicis Ornithologici, p. LXI <sup>1)</sup>, the same author described the bird under the name of *Phasianus ignitus* as follows: »Ph. niger, chalybeo nitens, lateribus corporis rufis, dorso imo igneo-ferrugineo, rectricibus intermediis subfulvis. Hab. in Java?"

In his Histoire naturelle des Pigeons et des Gallinacés, Vol. II, p. 273 (1813), Temminck described this species under the name of *Gallus Macartneyi*. The essential part of the description of the adult male is contained in the following words:.... »la poitrine et le ventre sont d'un noir à reflets violets, les plumes des flancs ont leurs extrémités d'un roux très brillant, .... les quatre pennes implantées au centre de la queue forment l'arc boutant, elles sont d'un roux clair."

Later on, p. 277, Temminck describes as a variety of this species a bird with »tout le plumage d'une teinte plus violacée, les plumes des flancs terminées de blanc et les quatre pennes du milieu de la queue d'un blanc pur." This »variety" can only be relative to *Lophura Vieilloti*, and the »female", the description of which immediately follows on p. 278, is not the female of *L. ignita* sive *Macartneyi*, but very likely that of either *L. Vieilloti* or *L. sumatrana*. The bird, described on p. 279 as the young male of *Gallus Macartneyi*, with

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1) This supplement bears the date of 1801, but as the author quoted here the article in App. II of his General Synopsis, which is dated 1802, the »Supplementum" must have been published afterwards.

» toutes les pennes de la queue rousses », is *Acomus erythrophthalmus*, while the birds, described on p. 280 as » des oiseaux jeunes prenant la livrée des adultes », with the tail-feathers » à moitié rousses et moitié noires », belong to *Acomus pyronotus*.

This mixing up of *G. Macartneyi* (*L. ignita*) with other species of the genus and even with the allied genus *Acomus* is the reason why Temminck could speak of having successively received more than twenty specimens of this species, while only a single specimen is at present found in the Leyden Museum.

The article on *Gallus Macartneyi* in Shaw, Gen. Zool. XI, p. 218 (1819), is a mere resumption of Temminck's above mentioned description with the inclusion of all its mistakes.

In 1822, Fleming, Philos. of Zool. II, p. 230, described the same bird as *Lophura ignita*, and as the genus *Lophura* is to be kept separate from *Gallus* as well as from *Phasianus*, this name as being the oldest must be accepted.

Latham, in his Gen. Hist. VIII, p. 184 (1823), describes his Fire-backed Pheasant as having the upper part of the belly ferruginous, varying into deep orange and » the four middle tail-feathers white ». He adds: » there are two sickle-shaped ones, fourteen inches in length; these are white, with the ends black. » Although this diagnosis is not quite correct, there can be no doubt about this bird being our *L. sumatrana*, which is here for the first time mentioned in literature. The cited habitat » Malay Coast » is evidently erroneous.

In the same work, p. 204, we find a bird described under the name of *Sumatran Pheasant* as having the breast-feathers ferruginous with black bands, and those on the abdomen white and dusky, tail like back, » Sumatra ». This bird is a female and belongs, on account of its chestnut brown tail, to either *L. sumatrana* or *Vieillotii*.

I am unable to decide under which species to place *Phasianus rufus*, and *ignitus* Gray in Griffith' ed. Cuv.

Notes from the Leyden Museum, Vol. XVII.

III, pp. 28—30 (1829). The first is a female, the second a male; both are very unsufficiently described. *Ph. castaneus* mentioned in the same work, is based upon a female from Penang and therefore belongs to *L. Vieilloti*.

Lesson, in his *Traité d'Ornithologie*, p. 493 (1831), provided Temminck's *Gallus Macartneyi* (our *L. ignita*) with a new generic name, calling it *Macartneya Macartneyi*.

The description of *Gallus Macartneyi* in Schinz, *Nat. Abb. Vög.* p. 248 (1833), is a mere translation from Temminck's description of the adult male of his *Gallus Macartneyi* in *Pig. et Gall.* II, p. 276, and must therefore be referred to *L. ignita*, while on plate 93, belonging to the letterpress, *L. Vieilloti* is represented instead of *L. ignita*.

Vieillot, *Gal. Ois.* II, p. 29 (1834), furnished us, under the name of *Gallus ignitus*, with a compilation made up after two different descriptions, wherein he described the bird as having the feathers of the flanks »terminées par une teinte orangée très éclatante”, and the middle tail-feathers »d'un roux clair ou blanches.” I need not say that only the birds with red central tail-feathers, as also his latin diagnosis, can be referred to *L. ignita* and those with white ones belong to *L. sumatrana*, while plate 207 represents *L. Vieilloti*. The mentioned latin diagnosis of the male is copied from Latham's Supplement to the Index Ornithologicus; that of the female, describing the tail as red, must be referred to either *L. Vieilloti* or *sumatrana*.

In Guérin Méneville, *Icon. Règ. Anim. Ois.* pl. 43, f. 3 (1829—38), the name *Houppifer ignitus* is used, but no description added (vide antea under »doubtful references”, p. 170).

In his *Genera of Birds*, Vol. III, p. 498 (1845), G. R. Gray distinguished two species: *Gallophasis ignitus* of which he considers *Phasianus rufus* Raffles to be the female, and *G. Vieilloti*, which he bases upon plate 207 in Vieillot's *Galerie des Oiseaux*.

Reichenbach, in his *Synopsis Avium*, list of the Gallinaceae (1848), also distinguished two species: *Macartneya*

*ignitus* and *M. Vieilloti*. The first he based upon Macartney's bird, and added as synonyms *Gallus Macartneyi* Temm., *Phasianus rufus* Raffl. and *Houppifer Diardi*. Two figures, Nos. 2029 and 2030 of plate 239, are added, but none of them is a true representation of any known species. No. 2030 would represent a red-tailed female of *Lophura* were it not for the color of the naked face which is red on the figure instead of blue. The second species, *M. Vieilloti*, really belongs to the species with white inner tail-feathers and white shaft-streaks on the flanks, it is correctly represented by the figures Nos. 2031—33. From this date up to the present day no mention has been made any more of the true *L. ignita*, although its name is wrongly made use of for the three other species at many times and by the most different authors.

In his »List of the specimens of Phasianidae" (P. Z. S. 1863, pp. 118 and 119) Selater recognized three species as belonging to his section *Euplocamus*: *E. Vieilloti*, *E. ignitus* and *E. nobilis*. The first of these three species, distinguished by the white-striped flanks and the pure white central tail-feathers, has first been mentioned by Temminck in *Pig. et Gall. II*, p. 277 (1813) as a variety of his *G. Macartneyi* (see antea, p. 187). Under this latter name Schinz has figured the same species on plate 93 of his *Nat. u. Abb. der Vög.* (1833), and again on plate 70<sup>1)</sup> of his *Naturgesch. der Vög.* (1853), but the descriptions on p. 248 of the first, and p. 147 of the second work are mere translations of Temminck's description of the adult male of *G. Macartneyi* and, consequently, must be referred to *L. ignita*.

To *L. Vieilloti* must also be referred the male bird described by Raffles in *Trans. Linn. Soc. XIII*, p. 320 (1822)

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1) On both these plates the central tail-feathers are pure white on the inner and salmon-color on the outer webs; this is not correct as Hume stated in a great number of specimens that the middle tail-feathers are always, even in younger males, pure white on both webs.

as *Phasianus ignitus*, while the female, as having no crest, does not belong to the genus at all. Next his *Ph. ignitus*, Raffles, in the same work p. 321, described *Phasianus rufus* as a new species. This is evidently the female of either *L. Vieilloti* or *L. sumatrana*, but being unable to decide to which of both species it belongs, I was obliged to range this name under the doubtful references.

In his *Tabl. Encyclop. Méth. Ois.* pl. 237 (1823) Vieillot figured *L. Vieilloti* under the name of *Ph. ignitus*, and again in *Gal. Ois.* pl. 207 (1834) under the name of *Gallus ignitus*, while the description belonging to this latter plate, as already explained (*antea* p. 189), cannot be referred to *L. Vieilloti*.

J. E. Gray, *Ill. Ind. Orn.* II, pl. 39 (1844), mentions *L. Vieilloti* under the name of *Euplocamus ignitus*.

His brother, G. R. Gray (*List Specimens Birds*, III, p. 26, 1844) was the first who separated this species from *L. ignita*, giving it the name *Euplocamus Vieilloti*. Since that time *L. Vieilloti* has, with but few exceptions, generally been considered a distinct species. In his *Genera of Birds*, III, p. 498 (1845) G. R. Gray mentions it under the generic name *Gallophasis*, Reichenbach (l. c.) as *Macartneya Vieilloti*.

The second species of Scater's essay is *E. ignitus*. Unfortunately this name is not bestowed upon Macartney's bird, but upon a specimen in the British Museum, received from a Mr. Reeves and said to have been sent from China. This bird, which evidently had been kept in captivity, does not agree with the true *Phasianus ignitus* as described by Staunton, Latham and others, but differs from it in having the middle tail-feathers pure white instead of fulvous and, for this reason, belongs to the species afterwards described by Dubois under the name of *E. sumatranus*. The true *E. ignitus* with chestnut flanks and fulvous central tail-feathers is not mentioned at all by Scater in his essay.

To the red-flanked species with white central tail-feathers must probably be referred the *Fire-backed Pheasant* in

Latham's Gen. Hist. VIII, p. 184 (1823), where the bird is told to have, as I was kindly informed by Dr. Sclater, »the upper part of belly ferruginous, varying into deep orange, and the four centre tail-feathers white". As already noticed before, Vieillot, in his *Galerie des Oiseaux*, says in the description the middle tail-feathers to be „d'un roux clair ou blanches"; this latter color would agree with our *L. sumatrana*. The same species again is described by Jardine in *Nat. Libr. Orn.* III, p. 214, under the name of *E. ignitus*; on the accompanying plate, representing the male, the central tail-feathers are white, but on the flanks neither red feathers nor white shaft-streaks are to be seen. The female is represented on the plate with a red tail and therefore belongs to either *L. Vieilloti* or *L. sumatrana*.

As the third species of *Euplocamus* in his essay Sclater established *E. nobilis*. The plate added to the description fully represents the characters of this new species. *E. nobilis*, the only species found in Borneo, was formerly only mentioned by S. Müller, *Verh. Land- en Volkenk.* p. 376, and by Low, *Sarawak* p. 411, under the name of *Euplocamus ignitus*.

Dr. Sclater's view, developed in his essay, was generally adopted during several years, until the publication of Elliot's monograph of the *Phasianidae* (1871). In this monograph Elliot acknowledged only two species of this genus: *E. ignitus* and *E. nobilis*. Under *E. ignitus* are united both *E. ignitus* and *E. Vieilloti*, the first being considered an immature stage of the latter, and no mention is made of Reeves' bird in the British Museum. Since the issue of this monograph some authors have adopted the view of Elliot's, while others kept sticking to Sclater's idea.

Hume, *Stray Feathers* 1877, p. 119, in criticising Elliot's view and defending that of Sclater's, clearly shows that *E. ignitus* cannot be identical with *E. Vieilloti* and asks what to make of the bird in the British Museum, described by Sclater as *E. ignitus*.



In his answer upon Hume's remarks, Ibis 1878, p. 124, Elliot declares not to know any bird agreeing with Selater's description of *E. ignitus* in P. Z. S. 1863; he further suggests that the bird, described by Latham as *Ph. ignitus*, might be identical with *E. nobilis* from Borneo. Later on, in the same volume p. 411, Elliot, who in the meantime had had the opportunity of examining Reeves' bird in the British Museum, points to its difference from Latham's *Ph. ignitus* and considers it a hybrid between *E. nobilis* and *E. Vieilloti*, having the chestnut color on the flanks of the first and the white median rectrices of the latter. This suggestion is supported by the evidence that the bird had been kept in captivity and by the note that it had been received from China. At the end of his remarks, Elliot resumes his altered opinion about the different species in the following terms: „As I formerly suggested might be the case, I now consider *P. ignitus* of Latham the same as *P. nobilis* of Selater, the latter name becoming a synonym; and the second species, called by me *P. ignitus*, should be known as *P. Vieilloti*; for, judging by the specimen in the British Museum, I fail to perceive any indications that would prove the existence of a third species of this section of the genus *Euplocamus*.”

This last view of Elliot's has been adopted by Mr. Grant in Catalogue XXII of the Birds in the British Museum (1893), only has the name *L. Vieilloti* been altered into *L. rufa*, which latter name was already proposed by Hume (Str. Feath. 1877, p. 121) on the ground of its priority<sup>1</sup>). As to Reeves' bird Mr. Grant seems to doubt its hybridity, as he separately describes it in a foot-note on p. 289, suggesting that it possibly might belong to a different species.

In fact Reeves' bird belongs to *L. sumatrana*, created

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1) I do not think it right to accept this name, which has been bestowed by Raffles (Trans. Linn. Soc. XIII, p. 321) upon a Sumatran red-tailed female, which can belong to *L. Vieilloti* as well as to *L. sumatrana* and therefore must be considered a doubtful synonym.

by Dubois in Bull. Ac. Belg. (2) Vol. 47, p. 825 (1879), who described an adult male from Sumatra, which fully agrees with Reeves' specimen in the British Museum. Another male of this species, obtained from the Leyden Museum, is said by von Pelzeln, Verh. zool. bot. Ges. Wien, XXIX, p. 531 (1880), to make part of the Imp. Mus. at Vienna. In this paper von Pelzeln, in accepting Elliot's opinion, adds as a third species *E. sumatranus* Dubois; Reeves' bird described as a hybrid by Elliot (Ibis 1878, p. 413), is not recognized as *E. sumatranus* but added to the synonymy of *E. ignitus* (in the wider sense with inclusion of *E. nobilis*), while *G. Macartneyi* Temm. is wrongly said to be synonymous with *E. sumatranus*.

Before closing this essay I am sorry to say that our knowledge of this genus is far from sufficient and that many vexing questions are still left undissolved.

With regard to the geographical distribution we find that the only species known from the continent, with the inclusion of the islands of Salanga and Penang, is *L. Vieilloti*, which is also spread over North-eastern and Western Sumatra (see antea p. 185). Opposite the Highlands of Padang, in the Residency of Palembang on the East-coast of the island, it is substituted by *L. sumatrana*, hitherto the only species obtained in that district. From the southernmost part of the island, the Lampongs, no *Lophura* has been stated as yet.

Opposite the coast of Palembang, and only separated from it by a rather narrow channel, lies the Island of Banka which, as we have seen before, is inhabited by *L. nobilis*. As this latter species is the only one found in Borneo, where it is spread over the whole island, and as it is hitherto not found in Billiton, it is a rather strange-looking fact to find it in Banka, which is ornithologically more closely related to Sumatra than it is to Borneo.

Taking into consideration the trading connections between Banka and Palembang the possibility of introducing to

Palembang specimens of *L. nobilis* from Banka on one side and of *L. Vieilloti* from the Highlands of Padang from the other, and of a hybridisation between both species as suggested by Elliot is not excluded, though it is rather improbable.

There was much chance last summer to settle this latter question experimentally in the Zoological Garden at Amsterdam, where a male of *L. Vieilloti* was kept together with a black-tailed hen (thus very likely *L. nobilis*). The result of the interbreeding were a couple of chicks, which unfortunately very soon died from cold. I hope that another time the result of this experiment will be more favorable and throw some light upon this vexing question. If *L. sumatrana* in fact once might turn out to be a hybrid between *L. Vieilloti* and *L. nobilis*, the same possibility might be adopted as well for *L. ignita*, of which we do not know the habitat at all and of which the female and immature stages of plumage are absolutely unknown.

What we also very greatly want to know is, how the change in the color of plumage is performed in males and females. As we have seen before in the descriptions of the species, there are amongst the red-tailed as well as amongst the black-tailed females specimens with different grades between red and black centres to the feathers on the lower surface, but we are absolutely unable to tell the reason for this inconstancy. Is it based upon a difference in age? And if so, which of them are the younger, the red-centred or the black-centred birds?

Have there never young males been mistaken for adult females? And cannot the difference in color of the females as described in our literature, partly be caused by such mistakes? It is certainly worth calling the attention of Directors of zoological gardens and private breeders to these questions, which for a great deal can only be satisfactorily dissolved by breeding and interbreeding the different species and making careful observations upon the products during the different phases from the chick to the adult bird.

It is out of doubt that our present collections are quite insufficient for a solution of these questions, which cannot be studied upon specimens with nothing but »India'', »Sumatra'', or even »Java'' or »China'' noted on the label. What we want are a great number of well-sexed males and females of different stages of age and from different trustworthy localities, and the breeding of and making careful observations upon hybrids between the different species, especially between *L. Vieilloti* and *L. nobilis*, *L. Vieilloti* and *L. sumatrana*, and between *L. sumatrana* and *L. nobilis*.

Leyden Museum, December 1895.

## NOTE XXVIII.

ON TESTUDO EMYS SCHLEG. & MÜLL. AND ITS  
AFFINITIES

BY

**Dr. Th. W. VAN LIDTH DE JEUDE.**

(Plates 5 and 6).

In 1840 <sup>1)</sup> Schlegel and Sal. Müller described in number 2 of the zoological part of »Verhandelingen over de natuurlijke geschiedenis der Nederlandsche Overzeesche Bezittingen» a new species of *Testudo*, which differed from the other species of this genus by its broad, slightly elevated shell, and by the extra-ordinary large scales, which cover the outer parts of the forefeet, the heel of the hind feet and the parts between the hind legs and the tail. In their description of this species, which they named *Testudo emys*, they mention the presence of 25 marginal shields, among which one nuchal shield, of a moderate size, the posterior part of which is broad and straight-lined. The two posterior marginals (the caudals) are strongly bent downwards. Moreover they mention the large abdominals with two pairs of shields in front and two pairs of posterior shields. The pectorals, which were overlooked in this enumeration of shields of the plastron, are described as a shield on each side of the plastron under the 3<sup>rd</sup> and 4<sup>th</sup>

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1) The publication of this work lasted from 1839 till 1844, so 1844 is generally taken as the year of publication of the description of *Testudo emys*; but the 2nd number containing this description was issued in 1840.

marginal, which shield in the shape of a scalene triangle is lying between the 2<sup>nd</sup> and 3<sup>rd</sup> pair of shields of the plastron, and runs down to the middle of the boundary line between these two shields.

The specimens of this species were captured in Sumatra, 1600 till 1800 feet above the level of the sea, in the neighbourhood of the river Aneh, south of the Goenong Singalang; and afterwards in the mountains east of Padang. In 1840 the Leyden Museum possessed six specimens, of which four are still present in our collections.

In 1851 A. Duméril, in his »Catalogue méthodique de la collection des reptiles du Muséum d'Histoire naturelle de Paris'', gives a description of a species of *Testudo*, which he names *Testudo emydoïdes*, and which species he refers to *T. emys* Schleg. & Müll. His description agrees in all points with that of Schlegel and Müller, except in the enumeration of the shields of the plastron, inasmuch as Duméril mentions 12 shields composing the plastron, without giving any indication that two of these shields (the pectorals) have a triangular form and do not form a suture together. As the only specimen in the Paris Museum was a specimen from the river Aneh (Sumatra), and presented by the Leyden Museum, I think we may suppose that it was one of the six typical specimens and agreed with Schlegel and Müller's description.

In 1852 J. E. Gray<sup>1)</sup> described what he thought to be a new species of the Emydæ, after a very imperfect shell, wanting several discal shields, from Singapore. He placed this species in a new genus »*Manouria*'', characterized by its double, separated caudal plates, and its short subtriangular pectoral shields, only occupying the angle between the outer edge of humeral and abdominal shields. Gray calls his new species *Manouria fusca*.

In his Catalogue of shield-reptiles, 1855, Gray men-

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1) Proceed. Zool. Soc. 1852, p. 134.

tious two specimens of *Manouria fusca*, both from Pinang, in the collections of the British Museum.

In 1860 the British Museum got another specimen of *Manouria fusca* from Australia (?), labelled Murray-river-turtle. Gray <sup>1)</sup>, in describing and figuring this third specimen (the first complete one, the others being but shells without the animal), states his genus *Manouria* to be a typical land-tortoise, and severs it from the family of the Emydæ in which he had formerly placed it.

A species, described by Leconte <sup>2)</sup> in 1854 under the name of *Teleopus luxatus* from Java, must, according to Gray, be regarded as a species of the genus *Manouria*, probably as *Manouria fusca*.

In 1853 E. Blyth <sup>3)</sup> described a great Burmese land-tortoise, under the name of *Testudo Phayrei*, with double caudal plates, very long and thick imbricated scales on the forelimbs, similar great elongate scales at the heel, and a group of 5 principal obtuse spines on either side of the tail, the median of them remarkably strong and thick. As habitat of this species Blyth mentions Arrakan, Tenasserim Provinces.

These specimens described by Blyth were afterwards examined by John Anderson <sup>4)</sup>, who compared them with specimens of *Manouria*, and found that these tortoises resembled one another in all points except in the arrangement of the pectorals. In the *Manouria*-specimens the pectorals were separated from each other, whilst the pectorals of the two specimens of *T. Phayrei* formed a suture with each other. Moreover Anderson observed that the *Manouria*-specimens had concave sterna, those of *T. Phayrei* being flat. As the *Manouria*-specimens were captured in a locality in Cachar, and *T. Phayrei* was from Arrakan,

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1) Proceed. Zool. Soc. 1860, p. 395, pl. XXXI (not 1863 as given in Boulenger's Catalogue, p. 153).

2) Proceed. Ac. Philadelphia, 1854, p. 187.

3) Journ. As. Soc. Beng. XXII, p. 639.

4) Proceed. Zool. Soc. 1872, p. 132.

Anderson tried to get some more specimens and succeeded in this attempt by the aid of Capt. Butler, who procured him three living specimens and two shells from one locality in Assam. Only one of these specimens had a concave sternum and in this specimen also the pectorals were separated from one another; whilst in the four other specimens with flat sterna the pectorals formed a suture together. From this, Anderson concludes that *Manouria fusca* and *Testudo Phayrei* are one and the same species »indicating two types of variation (one characteristic of the flat, the other of the concave sterna): the former being a suture of variable intensity in the middle line, the second a pectoral plate of variable development between the middle line and a short distance internal to the inner margin of the axilla.” Anderson is inclined to think that these last specimens with concave sterna are the males, and states that no specimen with flat sternum (which he thinks to be the females) as far as he knows off has the pectoral plates wholly apart. Supported by the authority of Dr. Günther <sup>1)</sup> that *Manouria fusca* is the same species as *Testudo emys* Schleg. & Müll., Anderson brings both *T. Phayrei* and *M. fusca* to *T. emys* and concludes his interesting article with a description of this species based on the living specimens he had got from Assam.

Anderson's opinion as to the synonymy of the three named species has been accepted by most of the later writers on this subject; f. i. the late Dr. Strauch takes the same view where in his »Bemerkungen über die Schildkrötensammlung” he writes <sup>2)</sup>: »denn einerseits hat Anderson nachgewiesen dass die so eigenthümliche Stellung der Pectoralplatten nur den Männchen von *T. emys* Müll. & Schl. zukommt, während bei den Weibchen diese Platten in der gewöhnlichen Weise in der Mittellinie des Brustschild-

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1) Anderson, l. c. p. 138, and Günther, Rept. Brit. India, 1864, p. 10.

2) Bemerkungen über die Schildkrötensammlung im Zoologischen Museum der Kais. Acad. d. Wissensch. zu St. Petersburg, 1890, p. 12.



des zusammenstossen''; and Boulenger mentions in his description of *Testudo emys*<sup>1)</sup>: „the pectoral shields may be widely separated from each other or form a short median suture.”

Dr. G. Bauer<sup>2)</sup>, however, is not so sure that the Sumatra-species is the same as that of the continent. Though he admits that there is a great possibility that there exists but one continental form and that *Scapia Falconeri*, *S. Phayrei*, *S. gigantea* and *Manouria fusca* may be synonymous, still he points to some differences in the form of the skull of the typical specimen of *Teleopus luxatus* Leconte from Java and the skull of *Manouria fusca* as figured by Gray. As to the Sumatra-species, Bauer had no opportunity to compare a skull or a drawing of a skull of *T. emys* with those of the other species, and therefore declares himself incompetent to solve the question of the synonymy of this species. He states three possibilities:

- 1<sup>o</sup> *Testudo emys* differs both from the continental as well as from the Java-species.
- 2<sup>o</sup> *Testudo emys* is identical with *Manouria fusca*.
- 3<sup>o</sup> *Testudo emys* is identical with the Java-species: *Teleopus luxatus*.

As the typical specimens of *T. emys* are in the collections of the Leyden Museum, I thought it worth while to try to solve this vexed question, but failed in the ultimate solution of the problem, owing to the fact: that none of our four Sumatra-specimens (two stuffed ones, one small one in spirits, and one skeleton) was provided with a statement as regards its sex. They all had the pectorals separated from each other, and flat sterna; the skeleton only having an indication of a convexity in the region of the femorals; and though it was very improbable still it was possible that all these specimens were males.

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1) Catalogue of the Chelonians, Rhynchocephalians and Crocodiles, 1889, p. 158.

2) Dr. G. Bauer, Bemerkungen über verschiedene Arten von Schildkröten. Zool. Anz. 1892, p. 155.

The fact that from 1840 until 1896 never a specimen was found in the many collections from Sumatra that were forwarded to our Museum, indicates *T. emys* must be a rather rare species. Still in January of this year we had the good luck to receive a large specimen of *T. emys*, which had died in the Zoological Garden at Rotterdam. This specimen, which was captured at Padang in Sumatra, was a female with a great many nearly full-grown eggs. It has the pectorals widely separated from each other.

This fact settles it, that in the Sumatra-form, whether it may be regarded as an other species or only as a variety of the continental form, the pectorals are separated in the female specimens, with the flat sterna.

In this point *T. emys* differs from *T. Phayrei*, in which latter the specimens with the flat sterna (probably the females) have the pectorals forming a suture together. As to the males of our Sumatra-species, it is very improbable that, in contradiction with what happens in the continental form, the pectorals would form a suture. Moreover, in looking over our specimens, the fact strikes us that the distance between the pectorals is not the same in all specimens; it is largest in our skeleton-specimen, and as that specimen is just the only one with an indication of a concavity in the femoral region, I think it very probable that, in accordance with *T. Phayrei*, in the males of *T. emys* the distance between the pectorals is larger than in the females. I am strengthened in this opinion by a communication I got, through the kindness of Mr. A. A. van Bemmelen, director of the Zoological Garden at Rotterdam, about another specimen of *T. emys*, still living in the Garden. In that specimen, which has also an indication of a concavity in the femoral region, the relation between the distance between the pectorals and the length of the sternum is as 1 to 2,6, in our skeleton the relation is as 1 to 2,9; whilst in our other specimens it is resp. 1 : 3,3, 1 : 3,4, 1 : 3,8 and 1 : 4. I think the specimen, living at Rotterdam, to be a male, in which case it would be proved

that in *T. emys* as well as in *T. Phayrei* the distance between the pectorals is largest in the males.

In the following table, in which the specimens are enumerated according to their size, *a* is a specimen preserved in spirits, *b* and *c* are stuffed specimens (of which *b* is in a bad condition), *d* and *e* are preserved as skeletons (*e* being the newly acquired specimen from Rotterdam), and *f* is the specimen still living at Rotterdam, which after its death will make part of our collections. I suppose the specimens *d* and *f*, both showing some concavity in the femoral region, to be males.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
	Cm.	Cm.	Cm.	Cm.	Cm.	Cm.
Length of sternum from gular to caudal notch. . . . .	16,4	17,8	30,5	31	42,5	46
Distance between the pectorals.	4,8	5	7,5	10,5	11,2	18
Length of the gulars. . . . .	2,5	2,9	4,7	6,4	6,8	—
Length of the brachials . . .	3,4	3	6,6	5,8	8,8	—
Length of the abdominals . .	6,3	6,9	11,5	12	17	18
Length of the femorals. . . .	2	2	4	3,6	6	—
Length of the anals. . . . .	3,1	4,1	6,2	6,6	8,1	5
Distance between the inguinals.	9,9	10,2	16,5	17	23,4	—
Greatest length over the curve from gular to caudal notch.	20,5	22	37,5	41	55	52

On comparing our two skulls of *Testudo emys* with the figure of the skull of *Testudo Falconeri* (the skull of one of the typical specimens of *Testudo Phayrei*) as given by Gray <sup>1)</sup>, we see that the forepart of the skull of *T. emys* is much more acute, that its lower jaw ends in a sharp point, and that the processus ectopterygoideus is much more developed in *T. emys* than in *T. Phayrei*.

The same points of difference were stated between the skull of *Teleopus luxatus* and Gray's figure by Bauer, who

1) Proc. Zool. Soc. 1869, p. 170.

had the advantage of examining the typical specimen of *T. luxatus*, and I think *T. luxatus* synonymous with *T. emys*, and the Java-form (if the specimen described by Leconte was really captured in Java, which I think rather problematical, as never one specimen of the genus *Testudo* reached the Leyden Museum from Java) as identical with the Sumatra-form.

As to *Manouria fusca* Gray, perhaps it might be a species differing from *Testudo emys*, or from *Testudo Phayrei*, or from both of them, and peculiar to the peninsula of Malacca or to the island of Pinang. Gray mentions as a difference between the skull of *T. Phayrei* and that of *Manouria fusca*, that the former has a broad, well-developed zygomatic arch, the arch in *Manouria fusca* being slender and weak. When, however, the female specimen from Pinang, mentioned under *a* in the Catalogue of Chelonians in the British Museum, has its pectorals forming a suture together, I should feel inclined to regard *Manouria fusca* identical with *Testudo Phayrei*: if, on the contrary, its pectorals are separated from each other, *Manouria fusca* should be nearer related with *Testudo emys*.

Leyden Museum, February 1896.

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#### EXPLANATION OF PLATES 5 AND 6.

*Testudo emys* Schleg. & Müll.

Fig. 1. Sternum of specimen *d.* <sup>1)</sup>

» 2. » » » *e.*

» 3. » » » *e.*

» 4 and 5. Skull of specimen *e.*

» 6. Lower jaw of specimen *e.*

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1) Vide p. 203.

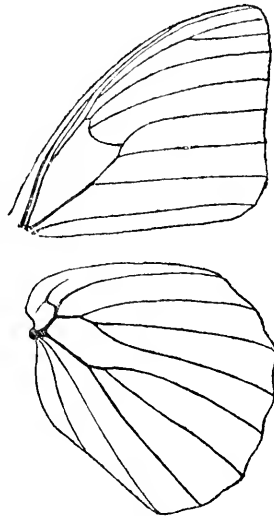
## NOTE XXIX.

EUTHALIOPSIS,  
A NEW GENUS OF RHOPALOCERA

BY

J. R. H. NEERVOORT VAN DE POLL.

The insect for which the generic name of *Euthaliopsis* is here proposed, has been known already long since, having been described by Hewitson in 1862 under the name of *Adolias Aetion* (Ex. Butt. III, *Adolias* t. 2, figs. 6, 7). — Butler, in dealing with *Adolias* (Proc. Zool. Soc. 1868, p. 613), refers *A. Aetion* Hew. (*Aetion* incorrectly spelt *Action*) to *Symphædra* with a ?. — Kirby's Catalogue of Rhopalocera enumerates it among *Symphædra* without a query. — Staudinger describing (Ex. Tagfalter, I, p. 152) an allied species or local form viz. *Plateni* Staud., places *Aetion* in *Euthalia*. — An examination, however, of the neuuration of the forewing shows at a glance that *Aetion* cannot find its place neither in *Euthalia* (*Adolias*) nor in *Symphædra*, differing from both as well as from the other allied genera by having only four instead of five subcostal-nervules. — The position of these nervules is no doubt better shown by the accompanying figure than by any description. — Hewitson's final remark



Notes from the Leyden Museum, Vol. XVII.

»the branches of the subcostal nervure are exactly as in *A. Lubentina*» cannot be the result of careful examination.

*Euthaliopsis Aetion* Hew. was originally described from the Aru-Islands; besides a specimen from that locality I have seen other specimens from Salawatti and Astrolabe-Bay (German New-Guinea), in each of which localities it occurs with distinct local modifications. — Staudinger (l. c.) makes mention of a Waigeou-variety, and as suggested by that author his *Plateni* from Batjan and Halmaheira may also prove to be an extreme varietal form.

Beukenstein-Museum, February 1896.

## NOTE XXX.

A NEW SPECIES OF THE MELOLONTHID GENUS  
APOGONIA

BY

C. RITSEMA Cz.

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*Apogonia metasternalis*, n. sp.

Easily recognizable by the semicircular impression on the middle of the metasternum, which impression is more distinct in the male than in the female.

Length 8,5—9,5 mm. — Oblongo-ovate, subparallel, glabrous, black, the elytra with a green or purple hue, the under surface and legs sprinkled with pale coloured bristles.

The face is deeply and closely punctured (the punctures larger and somewhat wider apart than those on the pronotum), and separated from the clypeus by a distinct suture which is preceded by a transverse smooth streak provided with some strong punctures; the clypeus itself strongly punctured, the punctures large and close together, the anterior margin narrowly reflexed, almost regularly rounded, very faintly truncate or emarginate in the middle; as the eyes lie in a lower level than the face, the inner orbit seems to be slightly thickened.

The punctuation on the pronotum is very even and dense; the anterior angles of the prothorax are acute but not prominent, the sides (viewed laterally) are much rounded behind the middle, and the posterior angles are very obtuse; the impressions at the basal margin, in front of the lateral angles of the scutellum, are very distinct. The scutellum is punctured, and has a smooth space at the base or a smooth line along the middle.

Notes from the Leyden Museum, Vol. XVII.

The elytra are covered with large and deep punctures; each elytron shows two very distinct narrow costae, the third (originating from the outside of the shoulder) being less distinct; along the sides are three rows of strong punctures, and the narrow space by which they are separated from the third costa bears on the basal half of the elytra a single row of similar punctures; the sutural interstice shows a regular row of fine but very distinct punctures; the costae, however, of which the second is triangularly enlarged at the base, are impunctate; the punctuation on the shoulders is obsolete.

The propygidium is very densely and rugosely, the pygidium very coarsely punctured, the latter bears some stiff hairs and shows a more or less distinct median keel.

The punctures on the sides of the prosternum are rather wide apart, on the sides of the metasternum they are close together, and on the abdomen they are the largest and pitlike, especially on the last segment. The basal segments of the abdomen are opaque. The anterior tibiae have three teeth of which the upper one is obsolete.

♂. The middle of the metasternum raised, the raised portion provided with a semicircular impression the open side of which is turned backward; the four basal joints of the tarsi thickened, those of the anterior pair broader.

♀. The middle of the metasternum less raised, the impression less distinct, the tarsi more slender.

*Hab.* Saigon. — A few specimens of both sexes in the Leyden Museum.

Leyden Museum, February 1896.



## NOTE XXXI.

ON THE GENUS CEROBATES SCHH.  
AND DESCRIPTION OF SOME NEW SPECIES

BY

**Dr. ANGELO SENNA,**

Assistant in the R. Museum at Florence.

The genus *Cerobates* Schh., widely spread in the oriental, australian and ethiopian regions, is chiefly characterized by having the anterior tibiae notched and strongly toothed on the inner edge, and by having the antennae filiform, not clubshaped; these two characters distinguish it respectively from *Trachelizus* Schh. and *Stereodermus* Lac.

In Lacordaire's classification of the Brentidae<sup>1)</sup> *Cerobates* belongs to the group Trachelizides, but in the new arrangement recently proposed by Prof. Sharp in the *Biologia Centrali Americana*<sup>2)</sup>, the Trachelizides are divided into two groups: Stereodermina and Trachelizina. In the former, *Stereodermus*, which has the anterior tibiae more or less notched and the hind coxae more than usually distant from one another, is considered as the typical genus of the group, whilst, in the latter, the typical genus *Trachelizus* has the anterior tibiae unnotched and the hind coxae separated by only the width usual in the Brentidae. *Cerobates* should be placed in the Stereodermina.

Lacordaire's group of the Ephibocerides (not »tribe'' as Prof. Sharp writes) is correctly suppressed being a group

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1) *Genera des Coléoptères*, vol. VII, p. 417, 1866.

2) *Coleoptera*, vol. IV, part 6, p. 7, 1895.

established on two characters — namely the long and slender antennae clothed with delicate hairs, and the large eyes occupying the greater part of the head — remarkably variable in the different genera. *Ephebocerus* Schh. having the anterior tibiae unnotched and being connected with *Trachelizus* by some central-american species is united with the Trachelizina; *Jonthocerus* Lac., which has the inner edge of the anterior tibiae notched and toothed, and which is allied to *Cerobates*, is placed in the Stereodermina. The other genera of the Ephebocerides known at present are: *Hyperephanus* Senna and *Anchisteus* Kolbe: the first has been described by Prof. Sharp under the name of *Homœolizus* and is placed in the Stereodermina, the latter, having the anterior tibiae unnotched, must be united with the Trachelizina. In consequence the Stereodermina are represented by *Stereodermus* Lac., *Stereobates* Sharp, *Hyperephanus* Senna (*Homœolizus* Sharp), *Jonthocerus* Lac. and *Cerobates* Schh. In all these genera the anterior tibiae are constantly more or less notched or toothed on the inner edge, whilst the hind coxae, which are more than usually distant from one another in the typical genus *Stereodermus* Lac., are less widely separated in other genera; on the other hand the distance between these parts in the Trachelizina is also different, so that the only character which satisfactorily distinguishes the two groups is the first mentioned.

The genera of the subfamily Stereoderminae<sup>1)</sup> may be differentiated as follows:

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1) Prof. Sharp (l.c.) calls this division „group”, not „subfamily” as I do. In his arrangement, the family Brenthidae is divided into two subfamilies: Brenthinae and Ulocerinae, corresponding to Lacordaire's tribes: Brenthides vrais and Ulocerides. As I retain Ulocerinae does not constitute a subfamily opposite to Brenthinae in Sharp and Lacordaire's sense, but simply a division of the same value as what is called group by these authors (see my note: Révision des espèces du genre *Ulocerus* Dalm.). I call these groups „subfamilies” as logical subdivisions of the family Brenthidae, and I indicate as groups the successive subdivisions of subfamilies, thence f. i.: family Brenthidae, subfamily Taphroderinae, group Cyphagogi, group Taphroderi, etc.

- I. Antennarum articuli tres apicales  
clavam plus minusve laxam for-  
mantes, semper longiores articulis  
praecedentibus.
- A. Tarsi breves vel modice elon-  
gati, articulo 1<sup>o</sup> ad maximum  
aeque longo duobus sequentibus  
unitis.
- a. Margines sulci prothoracis sim-  
plices vel elevati et rotundati,  
nunquam carinulati; elytro-  
rum interstitia 2<sup>um</sup> et 3<sup>um</sup> con-  
spicue intus curvata; tibiae  
normales . . . . . *Stereodermus* Lac.
- aa. Margines sulci prothoracis ca-  
rinulati; elytrorum interstitia  
2<sup>um</sup> et 3<sup>um</sup> vix intus curvata;  
tibiae lateraliter compressae,  
utrinque carinulae . . . . . *Stereobates* Sharp.
- AA. Tarsi valde elongati, graciles,  
articulo 1<sup>o</sup> pedum posticorum  
evidenter longiore duobus arti-  
culis sequentibus unitis.
- b. Corpus setosum; antennarum  
clava valde elongata; mar-  
gines sulci prothoracis cari-  
nulati . . . . . *Hyperephanus* Senna.  
(*Homæolizus* Sharp).
- II. Antennarum articuli tres apicales  
clavam haud formantes: articulo  
apicali solo interdum longiore quam  
praecedente.
- c. Oculi mediocres, antennae  
multo breviores corporis lon-  
gitudine, articulis breviter  
pilosus . . . . . *Cerobates* Schh.
- cc. Oculi in ♂ magni vel maximi,

antennae graciles, totius corporis longitudine parce breviores, articulis elongatis, cylindricis, longe, finissime pilosis . . . . . *Jonthocerus* Lac.

The species of the genus *Cerobates* Schh. are of small size, of graceful form and often closely allied to one another, therefore the determination is not always easy. As I describe here some new species, I believe it useful to give a table for the determination of all the species known at present <sup>1)</sup>.

I. Elytrorum angulus apicalis externus rotundatus et marginatus.

A. Prothorax omnino laevis, dorso planatus vel modice convexus.

a. Elytra juxta suturam basi vel usque ad apicem tristriata, versus latera laevius striata aut substriato-punctulata, raro omnino laevia; stria 3<sup>a</sup> dorsali usque ad apicem prolongata, interdum pone medium obsoletiore, raro oblitterata.

b. Antennarum articulus apicalis conspicue longior articulo praecedente, subcylindricus, apice acuminatus.

c. Metarostrum et mesorostrum sulcata, elytrorum striae impunctatae.

1. Subnitidus; capite, prothorace, elytrorum basi, regione suturali fasciaque transversa postmediana nigris vel ni-

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1) *Cerobates aciculatus* Walker from Ceylon (Ann. and Magaz. of Nat. Hist., 3rd ser. III, p. 262, 1859) is unknown to me and the description insufficient. I believe this species does not belong to *Cerobates*.

- gro-brunneis, cœterum ferrugineus . . . . . *sulcatus* Boh.
2. Similis et valde affinis sed nitidior, antennarum articulis medianis leviter longioribus. . . . . *sulcirostris* Thoms.
- cc. Metarostrum leviter foveolatum, elytrorum striae punctulatae.
3. Rufo-testaceus, nitidus, elytris dilutioribus, minus nitidis, sutura nigricante . *usambaricus* n.
- bb. Antennarum articulus apicalis vix longior praecedente, ovato-conicus.
- d. Elytra e tertio apicali usque ad apicem regulariter modiceque angustiora.
- e. Prorostrum longitudine subaequale metarostro.
4. Elytra versus latera distincte lineatim punctulata. *complanatus* n.
5. Elytra versus latera plus minusve striata, nunquam omnino laevia; stria 3 dorsali interdum pone medium angustiore, raro oblitterata. *tristriatus* Lund.
- ee. Prorostrum distincte longius metarostro.
6. Elytra versus latera laevia, nitida . . . . . *laevipennis* n.
- dd. Elytra a medio usque ad apicem longe, conspicue angustiora.
7. . . . . *angustipennis* Senna.
- aa. Elytra juxta suturam basi tristriata, lateribus laevissima vel

laevius striata quam dorso; stria  
3<sup>a</sup> dorsali basi vel medium ver-  
sus semper oblitterata.

8. Minor, rostro sat robusto,  
capite pone oculos rotun-  
dato, elytrorum stria 3<sup>a</sup> dor-  
sali medium versus oblite-  
rata, lateribus laevissimis. *sevsulcatus* Motsch.

9. Major, rostro gracili, capite  
pone oculos sub-angulato,  
elytrorum stria 3<sup>a</sup> dorsali  
basin versus oblitterata, la-  
teribus striatis . . . . *adustus* Senna.

AA. Prothorax longitudinaliter sulca-  
tus vel foveolatus, raro basi tenue  
canaliculatus nunquam omnino  
laevis.

f. Elytra juxta suturam tristriata,  
stria 3<sup>a</sup> dorsalis usque ad apicem  
prolongata.

g. Prothorax tenue interdum obso-  
lete canaliculatus, canaliculo  
plerumque antice evanescente.

10. . . . . *debilis* Thoms.

gg. Prothorax distincte sulcatus  
vel foveolatus.

h. Stria 3<sup>a</sup> dorsalis duplo lata  
praecedentis, interstitia an-  
guste carinata.

11. . . . . *fossulatus* Motsch.

hh. Stria 3<sup>a</sup> dorsalis vix latior  
praecedente, interstitia mi-  
nus angusta.

12. Caput pone oculos longe  
rotundatum, prothoracis  
impressio antice abbre-  
viata, elytra juxta sutu-

ram postice sub-quadri-  
striata. . . . . *Grouvellei* Senna.

13. Caput pone oculos breviter rotundatum, prothoracis sulcus ad apicem extensus, elytra antice et postice tristriata . . . *birmanicus* Senna.

*ff.* Elytra juxta suturam dimidio basali tristriata, stria 3<sup>a</sup> dorsali nunquam apicem attingens.

- i.* Elytra versus latera plus minusve distincte striata nunquam omnino laevia.

14. . . . . *canaliculatus* Motsch.

*ii.* Elytra versus latera laevia, nitida.

- j.* Caput pone oculos acute angulatum, prothorax fovea ovata signatus.

15. . . . . *vitiensis* Fairm.

*jj.* Caput pone oculos subrotundatum, prothorax sulcatus usque ad apicem.

16. Metarostrum sublaeve. . . *australasiae* Fairm.

17. Metarostrum distincte sulcatum . . . . . *sumatranus* Senna.

II. Elytrorum angulus apicalis externus breviter dentatus.

18. Caput pone oculos rotundatum, prothorax sulcatus usque ad apicem, elytra juxta suturam dimidio basali tristriata, stria 3<sup>a</sup> medium versus oblitterata, latera laevia. . . . . *andamanicus* n.

1. *Cerobates sulcatus* Boh.

Schoenherr, Gen. Curcul. V, p. 488, 1840.

Distinctive characters: Teguments hardly shining; head, rostrum and prothorax black or dull brown, elytra with the base, sutural interstice and a transverse band behind the middle of the same colour or slightly paler, the remaining surface ferruginous; apical joint of the antennae distinctly longer than the preceding one, prothorax not furrowed, elytra striate. — Length variable from 5 to 10 mill. — Not common.

*Hab.* Cape of Good Hope and Port Natal.

2. *C. sulcirostris* Thoms.

Thomson, Archives entom. II, p. 119, 1858.

Distinctive characters: Resembles in all respects *C. sulcatus* Boh., but the teguments are more shining, the median antennal joints more elongate. Colour more or less intense according to the size of the specimens which is variable from 5 to 10 mill. — Common.

*Hab.* Gaboon, Congo and Usambara.

3. *C. usambaricus*, n. sp.

*Rufo-testaceus, nitidus, elytris testaceis, minus nitidis, interstitio suturali nigricante; metarostro leviter foveolato, antennarum articulo apicali distincte longiore quam praeecedente, prothorace haud sulcato, nitidissimo, elytris dorso et lateribus striatis.* — Long. 7 mill.

*Hab.* Usambara (Plantation Derema).

One specimen collected by Mr. L. Conradt.

Head longer than the breadth at the base, angular behind the eyes, moderately convex above, obsoletely punctured; rostrum one half longer than the head; metarostrium foveolate, prorostrum broader at the tip. Antennae longer than the head and rostrum taken together, with the



median joints elongate, narrower at the base than anteriorly, the 9<sup>th</sup> and 10<sup>th</sup> slightly shorter than the median ones and almost oval; the apical joint cylindrical with the tip acuminate.

Prothorax oblong, not furrowed, obsoletely punctured, very shining. Elytra as long as  $2\frac{1}{2}$  the prothorax, with the base almost truncate, the shoulders rounded, striate above near the sutural interstice and at the sides, obsoletely punctured, the 3<sup>rd</sup> stria is prolonged down to the tip; the dorsal interstices moderately curved, narrower in the middle than in the remaining portion; apex of the elytra margined and rounded at the sides. Legs regular, anterior tibiae moderately toothed on the inner edge.

Body beneath rufous, shining; head and metarostrum at the sides with a line of hair-bearing punctures; prosternum foveolate anteriorly, impressed near the base; metasternum deeply furrowed, abdomen excavated at the base.

#### 4. *C. complanatus*, n. sp.

*C. complanatus* Pow. in litt.

*Depressus, ferrugineo-brunneus, nitidus, capite transverso, pone oculos subrotundato, fronte anguste foveolata; metarostro et mesorostro canaliculatis, antennis gracilibus, articulis medianis subovatis, apicali brevi, ovato-conico; prothorace valde dilatato, depresso, nitidissimo; elytris basi et apici juxta suturam tristriatis, medio bistriatis, stria 3<sup>a</sup> dorsali apicem attingente, versus latera lineatim punctulatis.* — Long.  $5\frac{1}{2}$  mill.

*Hab.* Bonjongo (Cameroon).

One specimen (Civic Museum of Genoa).

Head transverse, emarginate at the base, almost rounded at the sides behind the eyes, hardly convex above, front foveolate.

Metarostrum subconical, canaliculate; mesorostrum almost foveolate, prorostrum a little broader at the tip; antennae slender, short, with the median joints subovate, the apical one also short, ovato-conical.

Prothorax ovate, very broad and depressed, shining, very smooth, the apical margin narrow, truncate, notched at the sides.

Elytra as long as twice the prothorax, broad, emarginate at the base, the shoulders rounded; margined and rounded at the apex, tristriate along the sutural interstice at the base and at the tip, bistriate in the middle, the 3<sup>rd</sup> stria (external) prolonged down to the tip; the sides are punctured.

Legs paler, femora compressed, tibiae very short, the anterior ones deeply notched and toothed on the inner edge.

Body beneath reddish brown, shining, slightly scaled at the sides of the prothorax and in the impressions; head angularly notched at the base, mesorostrum bifoveolate laterally, prosternum depressed, almost marginate on the sides, metasternum and base of the abdomen depressed, the former channeled, apical segment of the latter impressed at the sides and in the middle.

Another specimen from the same locality differs in the following characters: head slightly narrower, more depressed, not foveolate between the eyes; rostrum shorter and broader, more depressed, very obsoletely channeled when viewed sideways; prothorax broader at the apical margin, truncate and less notched at the sides above, elytra shorter and hardly wider; head and metarostrum explanate beneath, the base of the former hairy; mesorostrum impressed, with the margins raised; metasternum with the sides of the median channel oblique inwardly; base of the abdomen broadly excavated, apical segment with the margin of the median foveola raised and hairy. These differences are probably sexual, but I am uncertain whether this specimen is a male or a female.

##### 5. *C. tristriatus* Lund.

*C. Lorquini* Jekel in litt., *Trachelizus pumilus* Dej., *pygmaeus* olim in Dejean's Catalogue.

Lund, Skrivt. af naturhist. selskab. V, 2, p. 66, 1802.

Distinctive characters: Head short, behind the

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eyes almost angulate, never regularly rounded, antennae with the 9<sup>th</sup> and 10<sup>th</sup> joints oval, the apical one short, ovato-conical; prothorax smooth, elytra along the sutural interstice tristriate, the 3<sup>rd</sup> dorsal stria in the typical form prolonged down to the tip; sides of the elytra distinctly striate. Colour ferruginous brown or chestnut, the sutural interstice darker. Sometimes the 3<sup>rd</sup> dorsal stria is narrower or obsolete behind the middle of the elytra. A smaller race (*Trachelizus pumilus* Dej., *pygmaeus* olim) is often pale brick coloured, has the 3<sup>rd</sup> stria interrupted or narrower behind the middle, and the sides of the elytra less evidently striate but never smooth and shining. The passages between the above mentioned forms are almost imperceptible among a great number of specimens and render a satisfactory separation of them very difficult. — Length  $4\frac{1}{2}$ — $8\frac{1}{2}$  mill. — Very common.

*Hab.* From Ceylon to New-Guinea.

#### 6. *C. laevipennis*, n. sp.

*Ferrugineo-brunneus, nitidus, capite brevi, pone oculos subangulato, rostro gracili, longiusculo, parte antica distincte longiore quam postica, hac sublaevi; antennarum articulis 9<sup>o</sup> et 10<sup>o</sup> ovatis, apicali brevi, ovato-conico; prothorace haud sulcato, depresso, nitidissimo; elytris juxta suturam tristriatis, stria externa apicem pertinente, lateribus laevibus, nitidis; apice rotundato et marginato.* — Long. 7 mill.

*Hab.* Sangi Islands.

One specimen in Walter Rothschild's Museum at Tring.

This species is without any doubt the representative of *C. tristriatus* in the Sangi Islands, and differs only from that species by having the rostrum slender, the prorostrum a little longer, the sides of the elytra smooth and shining.

#### 7. *C. angustipennis* Senna.

Notes from the Leyden Museum, XVI, p. 182, 1894.

Distinctive characters: Head short, angulate at

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the sides behind the eyes, metarostrum obsoletely foveolate; antennae with the 9<sup>th</sup> and 10<sup>th</sup> joints almost globuliform, the apical one short; prothorax smooth, depressed; elytra elongate, conspicuously attenuate behind the middle towards the tip, tristriate along the sutural interstice, the 3<sup>rd</sup> dorsal stria not interrupted; the sides are also striate. — Length  $5\frac{1}{2}$ — $7\frac{1}{2}$  mill. — Not common.

*Hab.* Java.

8. *C. sersulcatus* Motsch.

Motschulsky, Etudes entom. VII, p. 95, 1858.

Distinctive characters: Head regularly rounded behind the eyes: metarostrum almost smooth, apical joint of the antennae short, a little longer than the preceding one, prothorax smooth, shining; elytra along the sutural interstice tristriate in the basal half, the 3<sup>rd</sup> stria (external) interrupted towards the middle of the elytra, never prolonged down to the tip; the sides are smooth, very shining; the apex rounded and margined. — Length  $3\frac{1}{2}$ —6 mill. — Very common.

*Hab.* From Ceylon to New-Guinea.

9. *C. adustus* Senna.

Notes from the Leyden Museum, XVI, p. 184, 1894.

Distinctive characters: Body elongate, colour reddish brown or chestnut, sutural region often darker; head angular at the sides, rostrum slender, antennae with the median joints almost globuliform or slightly oval but shorter than in *C. tristriatus* Lund, apical joint short, ovato-conical; prothorax broad, depressed, smooth. Elytra elongate, tristriate along the sutural interstice in the basal third, bistriate in the remaining portion; the 3<sup>rd</sup> stria (external) interrupted near the base, disc of each elytron smooth, sides striate. — Length 9—10 mill. — Not common.

*Hab.* Java.

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10. *C. debilis* Thoms.

Thomson, Arch. entom. II, p. 118, 1858.

Distinctive characters: Elongate, colour chestnut or reddish brown, the sutural region darker; head short, eyes very approximate at the base, metarostrum foveolate, apical joint of the antennae distinctly longer than the preceding one; prothorax depressed, obsoletely channeled in the basal half, sometimes up to the apex, never smooth; elytra tristriate along the sutural interstice, the 3<sup>rd</sup> dorsal stria prolonged down to the apex, sides striate, obsoletely punctured. — Length  $5\frac{1}{2}$ —8 mill. — Common.

*Hab.* Congo, Gaboon and Zanzibar.

11. *C. fossulatus* Motsch.

Motschulsky, Etud. entom. VII, p. 96, 1858.

Distinctive characters: Head sulcate between the eyes, rostrum sulcate, except near the apex, antennae stoutish, prothorax sulcate up to the apex, elytra along the sutural interstice tristriate, the 3<sup>rd</sup> stria prolonged down to the tip, twice as broad as the internal one, interstices raised, keeled. — Length 5—6 mill. — Rare.

*Hab.* Burma.

12. *C. Grouvellei* Senna.

Bull. Soc. Entom. Ital. XXV, III, p. 307, t. II, f. 6, 1893.

Distinctive characters: Head rounded behind the eyes, furrowed on the front; metarostrum and mesorostrum furrowed; apical joint of the antennae moderately elongate; prothorax foveolate or sulcate, the furrow not prolonged up to the apical margin; elytra along the sutural interstice tristriate in the basal half, quadristriate behind the middle or near the apical declivity, sides very obsoletely striate-punctate. — Length 4— $5\frac{1}{2}$  mill. — Not common.

*Hab.* Sumatra and Brisbane.

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13. *C. birmanicus* Senna.

Ann. Soc. Entom. Belgique, XXXVIII, p. 364, 1894.

Distinctive characters: Head shorter than in *C. Grouvellei* Senna, rounded behind the eyes which are more approximate at the base, channeled above between the eyes; metarostrum and mesorostrum furrowed; apical joint of the antennae moderately longer than the preceding one; prothorax furrowed up to the apical margin; elytra along the sutural interstice tristriate, the 3<sup>rd</sup> stria prolonged down to the apex, sides of the elytra obsoletely punctured, not shining. — Length 5—6½ mill. — Not rare.

*Hab.* Burma.

14. *C. canaliculatus* Motsch.

Motschulsky, Etud. entom. VII, p. 96, 1858.

Distinctive characters: Head almost angulate at the sides, front and metarostrum more or less distinctly channeled, apical joint of the antennae moderately longer than the preceding one, prothorax furrowed up to the apical margin, elytra along the sutural interstice in the basal half tristriate, the 3<sup>rd</sup> stria (external) interrupted near the middle of the elytra, sides distinctly striate. — Length 4—5 mill. — Rare.

*Hab.* India and Perak.

15. *C. vitiensis* Fairm.

Le Naturaliste, III, p. 422, 1881; Ann. Soc. Entom. France, 6e sér. I, p. 463, 1881.

Distinctive characters: Head behind the eyes angulate, metarostrum and mesorostrum striolate, apical joint of the antennae moderately longer than the preceding one, prothorax foveolate in the basal half, elytra along the sutural interstice tristriate in the basal half, the 3<sup>rd</sup> stria interrupted near the middle of the elytra, sides smooth, shining. — Length 7½ mill. — Not common.

*Hab.* Fiji Islands.

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16. *C. australasiae* Fairm.

Aun. Soc. Entom. France, 6e sér. I, p. 463, 1881.

Distinctive characters: Head behind the eyes almost rounded, front obsoletely foveolate; metarostrum almost smooth; apical joint of the antennae moderately longer than the preceding one, prothorax furrowed up to the apical margin, elytra as in the preceding species but the striae less curved at the base. — Length  $4\frac{1}{2}$ —7 mill. — Not common.

*Hab.* Australia.

17. *C. sumatranus* Senna.

Bull. Soc. Entom. Ital. XXV, III, p. 306, t. III, f. 1, 1893.

Distinctive characters: Closely allied to *C. australasiae* Fairm., but the head slightly longer, the eyes less prominent, the front and metarostrum distinctly furrowed. — Length  $4\frac{1}{3}$ — $5\frac{3}{4}$  mill. — Not common.

*Hab.* Sumatra and Timor.

18. *C. andamanicus*, n. sp.

*Elongatus, angustus, depressus, brunneo-rufus, nitidus, pedibus ferrugineo-brunneis capite pone oculos rotundato, metarostro tenue sulcato, prothorace sulcato usque ad apicem, elytris lateribus sub-parallelis, apice singulatim sub-rotundatis, angulo externo breviter retrorsum dentato, dorso juxta suturam dimidio basali tristriatis, stria 3<sup>a</sup> medium versus oblitterata; lateribus laevibus, nitidis.* — Long.  $6\frac{1}{3}$  mill.

*Hab.* Andaman Islands.

A single specimen in my collection.

Head as long as broad, rounded behind the eyes which are rather large, base emarginate in the middle, slightly convex above; metarostrum slightly furrowed, prorostrum not longer, smooth. Antennae stoutish, with the joints ovate elongate, the apical joint moderately longer than

the preceding one, almost cylindrical, pointed at the tip.

Prothorax oblong-ovate, narrower anteriorly than at the base, depressed above, furrowed up to the apical margin.

Elytra elongate, the sides almost parallel, the apex rounded with the suture emarginate and the external angle shortly dentate; depressed above, tristriate near the sutural interstice in the basal half, the 3<sup>rd</sup> stria is interrupted near the middle of the elytra, sideways they are smooth, shining.

Legs regular. Body beneath more reddish, shining; metasternum and base of abdomen furrowed in the middle.

This species is easily distinguishable from all other known at present, by the peculiar character of the elytra, these having the external apical angles toothed; on the other hand it is closely allied to *C. australasiae* Fairm. and *C. sumatranus* Senna.

Florence, January 25<sup>th</sup> 1896.

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## NOTE XXXII.

ON THE GENUS PYCNONOTUS AND SOME  
ALLIED GENERA,WITH ENUMERATION OF THE SPECIMENS IN  
THE LEYDEN MUSEUM

BY

Dr. J. BÜTTIKOFER.

This paper, based especially upon the material in the Leyden Museum, may be regarded as a little attempt to show how much a revision of the Pycnonotidae is needed. A fundamental revision only, embracing the whole group, will be able to thoroughly differentiate the many genera, and it will be a thankful task, for instance, to thoroughly separate *Xenocichla* from *Criniger* <sup>1)</sup> and *Pycnonotus*. This latter genus is very unsatisfactorily defined, and undoubtedly contains too many heterogenous elements, which ought to be just as well excluded as are *Otocompsa* and *Kelaartia*. In fact the genus *Pycnonotus* should be restricted to the African and Syrio-Arabian species, which are sufficiently characterized by their plain earthy brown or sandy brown color, without white upper tail-coverts, without white-tipped tail and without any olive-green on the quills <sup>2)</sup>.

The Asiatic forms with paler edgings to the feathers on

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1) See my note on this subject in N. L. M. 1888, p. 78, and also Captain Shelley's remarks, Ibis 1896, p. 232.

2) *P. Falkensteini*, with its green upper surface (Sharpe, Cat. VI, p. 46) should be brought back under *Criniger*, as which it is originally described by Reichenow.

the mantle, with white or ashy white upper tail-coverts and white tips to the tail-feathers, combined with the absolute want of any olive-green in their plumage should form a separate group with the generic name *Molpastes* Hume.

The other Asiatic *Pycnonoti* with gray or brown plumage, but wanting the above mentioned peculiarities of *Molpastes*, and characterized by always having the outer margins of the quills more or less strongly tinged with olive-green, ought to form a separate genus under the name *Laedorusa* Reichenb.

Then follow all the different aberrant forms, which better would be placed under other, already existing or new genera, as will be shown in the following key to the genera.

#### Key to the genera.

- A. Tarsus longer than culmen.
  - a. Feathers on centre of crown much longer than the surrounding ones, forming a distinct crest.
    - a'. Feathers of crest sword-shaped, not pointed, and somewhat bent downward.
      - a''. Bill pyrrhuline, general color of plumage green. *Spizixus* 1).
      - b''. Bill pycnonotine, plumage not green. . . . *Otocompsa*.
    - b'. Feathers of the crown pointed, the longer ones slightly bent upward, forming a pointed crest . *Centrolophus*.
  - b. Feathers of crown all equally lengthened, or not lengthened at all, never forming a long crest.
    - a'. General color earthy brown or ashy brown, no olive tinge whatever on the plumage.
      - a''. Upper tail-coverts white or ashy white, different from the back, tail broadly tipped with white. . . . . *Molpastes*.
      - b''. Upper tail-coverts uniform in color with the back, tail-feathers never tipped with white . *Pycnonotus*.

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1) I introduce this genus here, though it is sufficiently distinguished from all the pycnonotine forms by its quite different bill, and though only the typical species is provided with a distinct crest.

- b'*. General color grayish or olive-brown, or olive-green, outer edge of quills more or less strongly tinged with olive.
- a''*. Sides of head entirely feathered.
- a'''*. No post-superciliar tuft of long, pointed feathers.
- a<sup>4</sup>*. Tail not strongly graduated.
- a<sup>5</sup>*. No brush-like saffran-yellow feathers above the lores.
- a<sup>6</sup>*. General color grayish brown or olive-brown, crown-feathers not lengthened, no nuchal color . . . . . *Laedorusa*.
- b<sup>6</sup>*. General appearance pachycephaline, crown-feathers lengthened, richly developed, black and silky.
- a<sup>7</sup>*. No red spot on the lower jaw . . *Pachycephalixus*.
- b<sup>7</sup>*. A red spot on the lower jaw . . *Stictognathus*.
- b<sup>5</sup>*. A bunch of saffran-yellow feathers above the lores . . . . . *Crocopsis*.
- b<sup>4</sup>*. Tail strongly graduated, difference between central and outermost feathers equal to the length of the tarsus . . . *Xanthirus*.
- b'''*. A long post-superciliar plumelet of pointed yellow feathers . . . . . *Kelaartia*.
- b''*. Sides of head above and behind the eye naked. . . . . *Gymnocrotaphus*.
- B. Tarsus equal to culmen in length.
- a*. Head distinctly crested.
- a'*. Feathers of crown all lengthened, plumage striated . . . . . *Alcurus*.
- b'*. Feathers on centre of crown only lengthened, plumage not striated.
- a''*. Crest not surpassing the culmen in length, rump-feathers subterminally barred with black.
- a'''*. Eyelid not wattled . . . . . *Pinarocichla*.
- b'''*. Eyelid wattled . . . . . *Poliolophus*.
- b''*. Crest very long, much surpassing the culmen in length, rump not barred. . . . . *Mesolophus*.
- b*. Head not crested, or very faintly so.
- a'*. Lengthened rump-feathers unbarred, tail nearly square, with no dark subterminal bar
- a''*. Throat-feathers red, narrow and stiff . . . *Rubigula*.
- b''*. Throat-feathers soft, like lower surface in color *Iridia*.
- b'*. Lengthened rump-feathers subterminally barred

- with black, tail much rounded, with a dark sub-terminal bar . . . . . *Brachypodius*.  
 C. Tarsus shorter than culmen, rump-feathers stiff and very long, almost entirely reaching the tips of upper tail-coverts. . . . . *Microtarsus*.

### GENUS *Spizixus* Blyth.

Type: *Spizixus canifrons* Blyth.

Bill stout, not pycnonotine, culmen very strongly curved, yellow, nostrils hidden by dense plumes, nasal aperture circular, tarsus longer than culmen, wing longer than tail, this latter nearly square, general color green, tail broadly tipped with black. — Three species known.

Range. Assam, China and Formosa.

#### Key to the species.

- a.* Crest longer than tarsus, ear-coverts brown, not streaked with white . . . . . *canifrons*.  
*b.* Crest shorter than tarsus, ear-coverts streaked with white.  
   *a'*. Crown black, hind neck gray . . . . . *semitorques*.  
   *b'*. Crown gray like hind neck . . . . . *cinereicapillus*.

#### 1. *Spizixus canifrons*.

*Spizixus canifrons* Blyth, J. A. S. Beng. XIV, p. 571 (1845); Sharpe, Cat. B. VI, p. 172 (1881); Oates, B. Br. Ind. I, p. 280 (1889); Baker, J. Bomb. N. H. Soc. VII, pl. I, fig. 1 (1892).

Hab. Assam.

Two specimens, said to be from Nepal.

#### 2. *Spizixus semitorques*.

*Spizixus semitorques* Swinh. Ibis 1861, p. 266; Sharpe, Cat. B. VI, p. 173 (1881).

Hab. China.

One specimen, collected by Swinhoe.

#### 3. *Spizixus cinereicapillus*.

*Spizixus cinereicapillus* Swinh. P. Z. S. 1871, p. 370; David & Onst. Ois. Chine, p. 144 (1877); Sharpe, Cat. B. VI, p. 173 (1881).

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Hab. Formosa.

Eight specimens, collected by Swinhoe.

GENUS *Otocompsa* Cabanis.

Type: *Otocompsa emeria* (L).

General aspect brown, lower surface much lighter, head strongly crested, the lengthened feathers restricted to forehead and centre of crown, on which latter they are very long, sword-shaped (not lanceolate) and slightly bent downward. A considerably long tuft of crimson-red, silky feathers below the eye, partly covering the pure white cheeks, under tail-coverts crimson. Tarsus longer than culmen, wing longer than tail. — Two species known.

Range. Indian Peninsula and Himalaya, extending through Assam to Cochin China and Tenasserim, Nicobars.

Key to the species.

- a. Tail-feathers tipped with white . . . . . *emia*.
- b. Tail-feathers not tipped with white. . . . . *fuscicaudata*.

1. *Otocompsa emeria* <sup>1)</sup>.

*Lanius emeria* L. Syst. Nat. I, p. 137 (1766).

*Lanius jocosus* L. Op. cit. p. 138.

*Muscicapa emeria* L. Op. cit. p. 326.

*Otocompsa jocosus* Sharpe, Cat. B. VI, p. 157 (1884).

*Otocompsa emeria* Hume, N. & E. p. 287; Oates, B. Br. Ind. I, p. 276 (1889).

Hab. South from the Himalayas throughout Bengal,

1) Linné (Syst. Nat.) mentions this bird under three different names: *Lanius emeria*, based upon Brisson's *Lanius bengalensis*, from Bengal, further *Lanius jocosus*, based upon Brisson's *Merula sinensis cristata minor*, from China, and *Muscicapa emeria*, based upon Albin's "Bengal Redstart", from Bengal. All three names belonging to either birds from Bengal or China, where only the species with a white-tipped tail is found, they must be considered synonyms, and the first of them, *Lanius emeria*, bestowed upon this species.

The second species of this genus, which has the tail not tipped with white, is neither found in Bengal nor in China, and therefore not entitled to bear any of the names given by Linné.

ranging eastward to Cochin China and southward to Malacca, the Andamans and Nicobars.

Seven specimens from the Himalaya, Darjeeling, Malacca, Andamans, and one said to be from Java.

2. *Otocompsa fuscicaudata*.

*Otocompsa fuscicaudata* Gould, P. Z. S. 1865, p. 664; Oates, B. Br. Ind. I, p. 277 (1889).

*Otocompsa emerita* Sharpe, Cat. B. VI, p. 159 (1881).

Hab. Western part of Southern India.

Not represented.

GENUS *Centrolophus*, n. g.

Type: *Centrolophus leucogenys* (Gray & Hardw.).

General color ashy, upper surface, the head excepted, tinged with olive, feathers of the crown lanceolate, those on the centre very much lengthened, forming a sharply pointed crest which is more or less bent upwards, tail tipped with white, under tail-coverts yellow. Tarsus longer than culmen, wing longer than tail. Differs from all the allied genera by the pointed crest. — One species known.

1. *Centrolophus leucogenys*.

*Brachypus leucogenys* Gray, in Hardw. Ill. Ind. Orn. I, pl. 35, fig. 3 (1830).

*Otocompsa leucogenys* Jerd. B. Ind. II, p. 90 (1863); Sharpe, Cat. B. VI, p. 160 (1881).

*Molpastes leucogenys* Oates, B. Br. Ind. I, p. 272 (1889).

Hab. Himalayas, from Afghanistan to Bhutan.

Six specimens from Nepal, Darjeeling and Bhutan.

GENUS *Molpastes* Hume.

Type: *Molpastes haemorrhous* (Gm.).

General aspect ashy brown, no green whatever in the plumage, head black, crown-feathers thickly set and lengthened, but not pointed, forming a sort of short crest

which does not reach far beyond the occiput; tail broadly tipped with white, upper tail-coverts pure white or ashy white, under tail-coverts red or yellow, strongly contrasting with the ashy under surface of the bird. Tarsus longer than culmen, wing longer than tail. From the African genus *Pycnonotus*, which is also destitute of any green in the plumage, it differs by the stronger and more thickly set crest, by the white tip to the tail and the white upper tail-coverts. — Ten species known.

Range. From Persia throughout British India and Ceylon eastward into Southern China and southward to Tenasserim; one species found in Java.

### Key to the species.

- a. Under tail-coverts red.
  - a'. Entire head and hind neck black, ear-coverts chocolate-brown, strongly contrasting with the surrounding plumage.
    - a''. Chin, throat, chest and upper breast black. . . . . *bengalensis*.
    - b''. Chin and throat only black, chest brown. . . . . *intermedius*.
  - b. The black of the crown not extending upon hind neck and mantle, ear-coverts not chocolate-brown.
    - a''. Ear-coverts black, undistinguishable from crown. *haemorrhous*.
    - b''. Ear-coverts sandy brown, contrasting with crown.
      - a'''. Chin, throat and chest black . . . . . *burmanicus*.
      - b'''. Chin and upper throat only black . . . . . *nigripileus*.
    - c''. Ear-coverts sandy white like lower surface . . . . . *atricapillus*.
- b. Under tail-coverts yellow.
  - a'. Chin and upper throat black.
    - a''. Back mottled with black centres . . . . . *aurigaster*.
    - b''. Back uniform . . . . . *Germaini*.
  - b. Chin and entire throat black, the lower throat very broadly so.
    - a''. Under tail-coverts saffron-yellow . . . . . *leucotis*.
    - b''. Under tail-coverts sulphur-yellow . . . . . *Humii*.

### 1. *Molpastes bengalensis*.

- Pycnonotus bengalensis* Blyth, J. A. S. Beng. XIV, p. 566 (1845).  
*Pycnonotus pygæus* Horsf. & Moore, Cat. B. Mus. E. I. Co. I, p. 239 (1854); Sharpe, Cat. B. VI, p. 128 (1881).  
*Molpastes bengalensis* Oates, B. Br. Ind. I, p. 271 (1889).

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Hab. From the North-Western Provinces of British India through Nepal and Bhutan to the Assam Valley.

Seven specimens from Nepal and Darjeeling.

## 2. *Molpastes intermedius*.

*Pycnonotus intermedius* (ex Hay, M.S.) Jerd. B. Ind. II, p. 95 (1863); Sharpe, Cat. B. VI, p. 130 (1881).

*Molpastes intermedius* Oates, B. Br. Ind. I, p. 272 (1889).

Hab. From Afghanistan to the Punjab and Cashmere.  
Not represented.

## 3. *Molpastes haemorrhous*.

*Pycnonotus haemorrhous* (Gm.) Blyth, J. A. S. Beng. XIV, p. 566 (1845); Sharpe, Cat. B. VI, p. 124 (1881).

*Molpastes haemorrhous* Oates, B. Br. Ind. I, p. 268 (1889).

Hab. From Sindh through Central and Southern India to Ceylon.

Nine specimens from the Continent and Ceylon.

## 4. *Molpastes burmanicus*.

*Pycnonotus burmanicus* Sharpe, Cat. B. VI, p. 125 (1881).

*Molpastes burmanicus* Oates, B. Br. Ind. I, p. 269 (1889).

Hab. From Assam through Manipur and Burma to Martaban.

Not represented.

## 5. *Molpastes nigripileus*.

*Pycnonotus nigripileus* Blyth, J. A. S. Beng. XVI, p. 472 (1847);

Sharpe, Cat. B. VI, p. 126 (1881).

*Molpastes nigripileus* Oates, B. Br. Ind. I, p. 270 (1889).

Hab. British Burma.

Two specimens from Tenasserim.

## 6. *Molpastes atricapillus*.

*Pycnonotus atricapillus* (Vieill.) Wald. in Blyth's Birds Burm. p. 136; Sharpe, Cat. B. VI, p. 127 (1881).

*Izus chrysorrhoides* Lafr. Rev. Zool. p. 367 (1845); David & Oust. Ois. Chine, p. 142, pl. 46 (1877).

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*Molpastes atricapillus* Hume & Dav., Str. Feath. VI, p. 322 (1878);  
Oates, B. Br. Ind. I, p. 270 (1889).

Hab. Southern China, Burma and Tenasserim.

Nine specimens from China and Tenasserim.

#### 7. *Molpastes aurigaster*.

*Pycnonotus aurigaster* (Vieill.) Gray, Gen. B. I, p. 237 (1847); Sharpe,  
Cat. B. VI, p. 137 (1881).

*Pycnonotus crocorrhous* Strickl. Ann. Nat. Hist. XIII, p. 412 (1844).

Hab. Java.

Eight specimens.

#### 8. *Molpastes Germaini*.

*Ixus Germaini* Oustalet, Bull. Soc. Philom. Paris (7) II, p. 54 (1878).

*Pycnonotus Germaini* Sharpe, Cat. B. VI, p. 138 (1881).

Hab. Cambodia.

Not represented.

#### 9. *Molpastes leucotis*.

*Pycnonotus leucotis* (Gould) Blyth, J. A. S. Beng. XIV, p. 567 (1845);  
Sharpe, Cat. B. VI, p. 136 (1881).

*Molpastes leucotis* Oates, B. Br. Ind. I, p. 273 (1889).

Hab. From Persia eastward through Sindh to North  
Western and Central India.

One specimen from Persia.

#### 10. *Molpastes Humii*.

*Molpastes Humii* Oates, B. Br. Ind. I, p. 274 (1889).

Hab. Punjab.

Not represented.

### GENUS *Pycnonotus* Boie.

Type: *Pycnonotus capensis* (L.).

General aspect ashy brown, no green in the plumage,  
upper tail-coverts uniform in color with back, no white  
tips to the tail-feathers, feathers of crown equally lengthened,

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but not forming a long crest; tarsus longer than culmen, wing longer than tail. — Seven species known.

Range: Africa and southern Spain, Arabia, Palestine and Syria, and the islands of Cyprus, Rhodos and the Cyclades.

### Key to the species.

- a.* Under tail-coverts yellow.
  - a'*. Head brown.
    - a''*. Equal in color above and below, centre of abdomen only white, eyelid red. . . . . *capensis*.
    - b''*. Breast, abdomen and flanks white, eyelid black. *tricolor*.
  - b'*. Head black.
    - a'''*. Ear-coverts brown . . . . . *Layardi*.
    - b'''*. Ear-coverts black like crown.
      - a''''*. Eyelid red . . . . . *nigricans*.
      - b''''*. Eyelid gray. . . . . *xanthopygus*.
- b.* Under tail-coverts white.
  - a'*. Head brown . . . . . *barbatus*.
  - b'*. Head black . . . . . *arsinoë*.

### 1. *Pycnonotus capensis*.

*Turdus capensis* L. Syst. Nat. I, p. 295 (1766).

*Pycnonotus capensis* Boie, Isis 1826, p. 973; Dresser, Birds Europe, III, p. 361, pl. 143, fig. 2 (1875); Sharpe, Cat. B. VI, p. 130 (1881).

Hab. Cape Colony, South Africa.

Seven specimens.

### 2. *Pycnonotus tricolor*.

*Ixos tricolor* Hartl. Ibis 1862, p. 341.

*Pycnonotus nigricans* var. *minor* Heugl. Orn. N. O. Afr. I, p. 398 (1869).

*Pycnonotus tricolor* Gray, Handl. I, p. 269 (1869); Sharpe, P. Z. S. 1874, p. 131, pl. 7, fig. 2; Bocage, Orn. d'Ang. p. 244 (1881); Sharpe, Cat. B. VI, p. 131 (1881).

*Pycnonotus minor* Rehw. Vög. Deutsch O. Afr. p. 207 (1894).

Hab. Congo-region, extending northward to the Ogowe River, southward to the Cunene River and eastward to the Upper Nile and the Central Lake-region.

Two specimens from the Bahr el Ghazal, collected by

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Heuglin in February 1863 and received under the name of *P. xanthopygos*.

This species is distinguished from *P. capensis* by its white breast, abdomen and flanks, and the black eyelids. The two above mentioned specimens from the Bar el Ghazal agree in every respect with Hartlaub's short diagnosis and also with the figure on pl. VII, given by Sharpe in P. Z. S. 1871, and with the description in the above quoted work of Reichenow's.

After a conscientious study of the literature and the materials at my disposal, I feel convinced that this species interbreeds with its northern congener *P. barbatus* as well as with its southern neighbour *P. nigricans*. The result of the interbreeding with *P. barbatus* in the places where both species occur in common, is the form described by Sharpe as *P. gabonensis*, which is characterized by having the white under tail-coverts more or less strongly tinged with yellow.

From the typical *P. nigricans*, our species differs in having the head brown instead of black, in the pure white breast and abdomen and in having the iris dark brown instead of red, and the eyelid black instead of orange red.

Barboza du Bocage, Orn. d'Ang. p. 242, in treating of *P. nigricans*, tells us that amongst numerous individuals from Angola there are only two which fully agree with the types of *P. nigricans*, while in all the others the head is not black, but scarcely darker brown than the back, and the eyelid black instead of orange red, so that these specimens make the impression to belong rather to *P. tricolor* than to *P. nigricans*, and I should say that they really belong to *P. tricolor*.

The occurrence of both forms in the same localities has caused some doubts as to the specific distinctness of the two forms, and Prof. Bocage does not decide whether the black head, yellow eyelid and red iris are merely the characteristic of the adult male in breeding plumage or those of a distinct species.

With the aid of some specimens of both sexes, collected

at different times of the year by Sala and by van der Kellen, I do not hesitate to declare both species as valid and distinct, but frequently interbreeding in the hinterland of Mossamedes and the Upper Cunene region.

Besides five specimens from Mossamedes, unquestionably belonging to *P. nigricans*, our Museum is in possession of three individuals, collected by van der Kellen in the Upper Cunene region and erroneously mentioned in N. L. M. 1888, p. 228 and 1889, p. 196 as *P. Layardi*, which represent as many different forms of hybridism. The first, shot on Febr. 23<sup>rd</sup> 1888, a female with black head, orange eyelid and red iris, should make the impression of a true *P. nigricans*, were it not for the white breast and abdomen, which is a characteristic of *P. tricolor*.

The second specimen, a male, shot on Sept. 28<sup>th</sup> 1891, resembles *P. nigricans* by its entirely black head and dirty grayish white under surface, while by the black eyelids and the dark brown iris it resembles *P. tricolor*.

The third specimen, a female, shot on April 14<sup>th</sup> 1886 near Huilla, belongs to *P. tricolor* on account of its white under surface, the black eyelid and brown iris, but the head is blackish brown, much darker than in the two specimens from Bahr el Ghazal and for this reason may represent another form of hybridism.

### 3. *Pycnonotus Layardi*.

*Pycnonotus Layardi* Gurney, Ibis 1879, p. 390; Sharpe, Cat. B. VI, p. 132 (1881).

Hab. South Africa as far north as Lake Nyassa and Damara Land.

Two specimens from Port Natal.

### 4. *Pycnonotus nigricans*.

*Pycnonotus nigricans* (Vieill.) Gray, Gen. B. I, p. 237 (1847); Sharpe, Cat. B. VI, p. 134 (1881).

Hab. South Africa, from Transvaal to Damara Land, extending north to the Quanza River.

Five specimens from Mossamedes.

About the hybridisation between this species and *P. tricolor* see antea, p. 235.

This species is based by Vieillot upon Levaillant's plate of the „Brunoir”, which is represented as having a red eyelid.

#### 5. *Pycnonotus xanthopygus*.

*Ixus xanthopygus* Hempr. & Ehr. Symb. Phys. fol. bb; Rüpp. Neue Wirbelth. Vög. p. 83.

*Pycnonotus xanthopygus* Dresser, Birds Europe, III, p. 357, pl. 143, fig. 1 (1875); Sharpe, Cat. B. VI, p. 135 (1881).

Hab. North-eastern Africa, Arabia, Palestine, Syria, and the islands of Cyprus, Rhodos and the Cyclades.

Four specimens from Syria, three from Palestine and one from Akaba in Arabia. This latter specimen differs considerably from the others by the much paler color above and below; also the under tail-coverts are paler than in the Syrian and Palestine specimens.

#### 6. *Pycnonotus barbatus*.

*Pycnonotus barbatus* (Desf.) Dresser, Birds Europe, III, p. 353, pl. 142 (1875); Sharpe, Cat. B. VI, p. 146 (1881).

Hab. North-western Africa, from Algeria and Morocco through Upper Guinea down to the Gaboon, where it probably interbreeds with *P. tricolor* (see antea, p. 235).

The Leyden Museum contains the following specimens: One said to be from Andalusia (Spain) received from the Paris Museum in 1838, one from Algeria, five from Liberia, five from the Gold Coast and two from the Gaboon. The two latter specimens do not show any yellow color on the under tail-coverts.

#### 7. *Pycnonotus arsinoë*.

*Ixus arsinoë* Hempr. & Ehr. Symb. Phys. sig. aa.

*Pycnonotus arsinoë* Gray, Gen. B. I, p. 237 (1847); Sharpe, Cat. B. VI, p. 148 (1881).

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Hab. North-eastern Africa, from Egypt through Abyssinia to Somali Land; Southern Arabia.

Four specimens from Egypt and one from Akaba in Arabia.

GENUS *Laedorusa* Reichenbach <sup>1)</sup>.

Type: *Laedorusa analis* (Horsf.).

General aspect dull earthy brown, olive-brown or olive-green, quills always more or less edged with olive-green, feathers on the crown not or only feebly lengthened, never forming a long crest; tarsus longer than culmen. — Ten species known.

Range. British India with inclusion of Ceylon; Sumatra, Banka, Java, Borneo and the Philippine Archipelago.

Key to the species.

- a. Under tail-coverts distinctly yellow.
  - a'. A white superciliary stripe.
    - a''. Upper surface earthy brown.
      - a'''. Ear-coverts like sides of head . . . . . *analis*.
      - b'''. Ear-coverts dark brown, conspicuous . . . . . *goiavier*.
    - b''. Upper surface olive-green.
      - a'''. Lores black, moustachial streak tinged with yellow. . . . . *luteola*.
      - b'''. Lores white like the rest of the face . . . . . *leucops*.
  - b'. No white superciliary stripe, head olive-yellow. . . . . *xantholaema*.
- b. Under tail-coverts not distinctly yellow.
  - a'. Ear-coverts with narrow white shaft-streaks.
    - a''. Back ashy brown, no tinge of olive-green . . . . . *Blanfordi*.
    - b''. Back brown, tinged with olive-green.
      - a'''. Abdomen grayish brown . . . . . *plumosa*.
      - b'''. Abdomen yellowish white . . . . . *cinereifrons*.
  - b'. No white shaft-streaks to the ear-coverts.

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1) The present genus contains a number of somewhat heterogeneous elements. Some of the species (*L. analis*, *goiavier*, *luteola*, *plumosa*, *cinereifrons*, *simplex* and *pusilla*) have the wing longer than the tail, while in *L. leucops*, *xantholaema* and *Blanfordi* the wing is equal to the tail or shorter. In some species the tail is nearly square, and in others more rounded, but this difference is not sufficient and does not fully coincide with the difference in the length of the tail, so that no generic characters can be based upon.

*a''*. Larger, no orange eyelid, throat not ashy white *simplex*.

*b''*. Smaller, eyelid orange, throat ashy white. . . *pusilla*.

### 1. *Laedorusa analis*.

*Turdus analis* Horsf. Tr. Linn. Soc. XIII, p. 147 (1820); Raffl. t. c. p. 310.

*Loidorusa* Reichenb. Av. Syst. Taf. 54, fig. 11 (1850).

*Laedorusa analis* Cab. Mus. Hein. I, p. 109 (1850 ex Reichenb.).

*Pycnonotus analis* Selater, P. Z. S. 1863, p. 216; Sharpe, Cat. B. VI, p. 140 (1881); Oates B. Br. Ind. I, p. 287 (1889).

Hab. Malay Peninsula, Siam, Cochin China, Sumatra, Java, Lombok, Borneo.

Twelve specimens from Sumatra, six from Banka, three from Java, sixteen from Borneo, and one from Labuan.

### 2. *Laedorusa goiavier*.

*Muscicapa goiavier* Scop. Del. Faun. et Flor. Insubr. II, p. 96 (ex Sonn.).

*Pycnonotus goiavier* Gray, Gen. B. I, p. 237 (1847); Sharpe, Cat. B. VI, p. 141 (1881).

*Laedorusa goiavier* Cab. Mus. Hein. I, p. 109 (1850).

Hab. Philippine Archipelago.

Four specimens from Marinduque, Mindanao, and Sulu.

### 3. *Laedorusa luteola*.

*Haematornis luteolus* Less. Rev. Zool. 1840, p. 354.

*Pycnonotus luteolus* Gray, Gen. B. I, p. 237 (1847); Sharpe, Cat. B. VI, p. 143 (1881); Oates, B. Br. Ind. I, p. 290 (1889).

Hab. Ceylon, (?)Banka, (?)Java.

The Leyden Museum is in possession of six specimens from Ceylon, and moreover of two from Banka and of one from Java.

### 4. *Laedorusa leucops*.

*Oreoctistes leucops* Sharpe, Ibis 1888, p. 388, pl. IX, fig. 1.

Hab. Kina Balu, between 7000—8000 feet.

One specimen.

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5. *Laedorus xantholaema*.

*Pycnonotus xantholaemus* Jerd. Madr. Journ. XIII, p. 122 (1844)  
Sharpe, Cat. B. VI, p. 146 (1881); Oates, B. Br. Ind. p. 289  
(1889).

Hab. South India.

One specimen from Madras.

6. *Laedorus Blanfordi*.

*Pycnonotus Blanfordi* Jerd. Ibis 1862, p. 20; Sharpe, Cat. B. VI,  
p. 151 (1881); Oates, B. Br. Ind. I, p. 291 (1889).

Hab. Pegu and Burma, extending eastward into Cochin China.

Not represented.

7. *Laedorus plumosa*.

*Pycnonotus plumosus* Blyth, J. A. S. Beng. XIV, p. 567 (1845);  
Sharpe, Cat. B. VI, p. 152 (1881); Oates, B. Br. Ind. I, p. 292  
(1889).

Hab. From southern Tenasserim through the Malay Peninsula, Sumatra, Nias, Banka, Borneo, Java, Ceylon (Diard 1859).

Three specimens from Sumatra, one from Banka, three from Borneo, one from Java and one from Ceylon.

8. *Laedorus cinereifrons*.

*Brachypus cinereifrons* Tweedd. P. Z. S. 1878, p. 617.

*Pycnonotus cinereifrons* Sharpe, Cat. B. VI, p. 153 (1881).

Hab. Palawan, Philippine Archipelago.

Three specimens.

9. *Laedorus simplex*.

*Pycnonotus simplex* Less. Rev. Zool. 1839, p. 167; Sharpe, Cat. B. VI, p. 153, pl. IX (1881).

*Pycnonotus plumosus* Büttik. N. L. M. 1887, p. 61.

Hab. From Tenasserim through the Malay Peninsula, Sumatra, Nias, Banka, Java and Borneo.



One specimen from Wellesley (Malacca), three from Sumatra, four from Banka, and six from Borneo.

10. *Laedorus pusilla*.

*Pycnonotus simplex* (nec Less.) Bp. Consp. I, p. 263 (1850); Büttik. N. L. M. 1887, p. 61.

*Pycnonotus pusillus* Salvad. Ucc. Born. p. 200 (1874); Sharpe, Cat. B. VI, p. 155, pl. X (1881); Oates, B. Br. Ind. I, p. 293 (1889); Murray, Avif. Brit. Ind. II, p. 43, pl. (1889).

*Pycnonotus Salvadorii* Sharpe, Cat. B. VI, p. 401 (1881).

Hab. From Southern Tenasserim through Malacca to Sumatra and Borneo.

Five specimens from Sumatra and one from Borneo.

GENUS *Pachycephalixus*, n. g.

Type: *Pachycephalixus sinensis* (Gm.).

General appearance more pachycephaline than pycnonotine. Head thick, feathers on the crown black, equally lengthened, thickly set and silky, not forming a distinct crest; a collar round the hind neck purplish brown, distinct from rest of upper surface, which is gray, all the feathers, quills and tail-feathers included, edged with olive-yellow, lower surface white, laterally also edged with yellow, a broad purplish brown band across the chest, tail nearly square, tarsus longer than culmen, wing longer than tail. — Two species known.

Range: From the Yangtze Kiang through South China into Siam, Formosa, Hainan and Naochow.

Key to the species.

- a. Forehead and centre of crown black, nape from behind the eye white . . . . . *sinensis*.
- b. Entire crown black . . . . . *hainanus*.

1. *Pachycephalixus sinensis*.

*Muscicapa sinensis* Gm. Syst. Nat. I, p. 942 (1788).

*Pycnonotus sinensis* Blyth, J. A. S. Beng. XIV, p. 569 (1845); Sharpe, Cat. B. VI, p. 149 (1881).

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Hab. South China and Formosa; Japan (teste Salvadori, Mem. Ac. Tor. XXXIX, p. 123).

A great number from both localities.

2. *Pachycephalixus hainanus*.

*Ixus hainanus* Swinhoe, Ibis 1870, p. 253; David & Oust. Ois. Chine, p. 141 (1877).

*Pycnonotus hainanus* Sharpe, Cat. B. VI, p. 150 (1881).

Hab. The Islands Hainan and Naochow.

One specimen from Naochow Island.

GENUS *Stictognathus*, n. g.

Type: *Stictognathus taivanus* (Styan).

Closely related to *Pachycephalixus* as to its pachycephaline character, but easily distinguished by the scarlet spot on the base of the lower mandible, and by the want of the olive-yellow lateral edgings to the feathers on upper and lower surface. — Two species known.

Range. The mountainous regions of Southern China and of Formosa.

Key to the species.

- a. Upper surface of wing and tail richly tinged with olive-yellow, under tail-coverts white, edged with olive. *taivanus*.
- b. Upper surface brown, the quills but slightly edged with olive, under tail-coverts golden yellow . . . *xanthorrhous*.

1. *Stictognathus taivanus*.

*Pycnonotus taivanus* Styan, Ibis 1893, p. 470; id. id. 1894, p. 337, pl. IX.

Hab. The mountainous regions of South Formosa.

Not represented.

2. *Stictognathus xanthorrhous*.

*Pycnonotus xanthorrhous* Anderson, Pr. A. S. Beng. 1869, p. 265; Sharpe, Cat. B. VI, p. 139 (1881).

*Ixus xanthorrhous* Swinh. P. Z. S. 1871, p. 369; David & Oust. Ois. Chine, p. 141, pl. 45 (1877).

Hab. The mountainous regions of South China.

Not represented.

GENUS *Crocopsis* Reichenbach.

Type: *Crocopsis bimaculatus* (Horsf.).

Upper surface more or less tinged with olive-green, underneath earthy brown or whitish, under tail-coverts yellow, feathers on crown not lengthened, a bunch of brush-like feathers above the lores, at the base of the upper mandible, golden orange, tarsus longer than culmen, wing equal to the tail in length, the latter much rounded. — Three species known.

Range. From Burma to Cochin China, and southward through Tenasserim and Malacca to Sumatra and Java.

Key to the species.

- a. Golden yellow spot above the lores large, no yellow on crown and throat . . . . . *bimaculatus*.
- b. Golden yellow spot above the lores small, fore-head, cheeks, chin and throat olive, with broad yellow shaft-streaks.
  - a'. Fore-head only yellow, hinder part of crown gray. *Finlaysoni*.
  - b'. Entire crown dull olive-yellow . . . . . *Davisoni*.

1. *Crocopsis bimaculatus*.

*Turdus bimaculatus* Horsf. Trans. Linn. Soc. XIII, p. 147 (1820).

*Pycnonotus bimaculatus* Blyth, J. A. S. Beng. XIV, p. 567 (1845);

Sharpe, Cat. B. VI, p. 138 (1881).

*Crocopsis* Reichenb. Av. Syst. Taf. 54 (1850).

*Crocopsis bimaculata* Reichenb. J. f. O. 1854, p. 150.

Hab. Sumatra and Java.

Two specimens from Sumatra and five from Java.

2. *Crocopsis Finlaysoni*.

*Pycnonotus Finlaysoni* Strickl. Ann. Nat. Hist. XIII, p. 411 (1844);

Sharpe, Cat. B. VI, p. 144 (1881); Oates, B. Br. Ind. I, p. 287 (1889).

Hab. From Burma to Cochin China and through Tenasserim to Malacca.

Two specimens from Cochin China and one from Tenasserim.

3. *Crocopsis Davisoni*.

*Irus Davisoni* Hume, Str. Feath. 1875, p. 301.

*Pycnonotus Davisoni* Sharpe, Cat. B. VI, p. 145 (1881); Oates, B. Br. Ind. I, p. 288 (1889).

Hab. Western Burma.

Not represented.

GENUS *Xanthixus* Oates.

Type: *Xanthixus flavescens* (Blyth).

Above olive-green, underneath strongly tinged with yellow, feathers on the crown not much lengthened, tarsus longer than culmen, tail longer than wing, much graduated, the difference between the central and outermost feathers equal to the length of the tarsus. — One species known.

1. *Xanthixus flavescens*.

*Pycnonotus flavescens* Blyth, J. A. S. Beng. XIV, p. 568 (1845); Sharpe, Cat. B. VI, p. 143 (1881).

*Xanthixus flavescens* Oates, B. Br. Ind. I, p. 275 (1889); Baker, J. Bomb. N. H. Soc. VII, pp. 1—4, pl. I (1892).

Hab. Khasia Hills, Burma and Tenasserim.

Not represented.

GENUS *Kelaartia* Jerdon.

Type: *Kelaartia penicillata* (Blyth).

*Phacalias*, Nom. emend. pro »*Kelaartia*“, F. Heine, Nomenclator Mus. Hein. p. 67.

Above green, underneath olive-yellow, on the hinder part of the upper eyelid a long tuft of yellow, pointed feathers, crown-feathers broad, somewhat lengthened, feathers of the lores also lengthened, erect, white, tarsus longer than culmen, tail nearly square, and equal to the wing in length. — One species known.

Range. Ceylon.

1. *Kelaartia penicillata*.

*Pycnonotus penicillatus* Blyth, J. A. S. Beng. XX, p. 178 (1851).

*Kelaartia penicillata* Jerd. B. of Ind. II, p. 86 (1863); Legge, Birds Ceylon, p. 480, pl. 21 (1880); Sharpe, Cat. B. VI, p. 162 (1881); Oates, B. Br. Ind. I, p. 296 (1889).

Hab. Ceylon.

One specimen.

GENUS *Gymnocrotaphus*, n. g.

Type: *Gymnocrotaphus tygus* (Bp.).

Above and below olive-green, feathers underneath broadly centred with white; sides of head above, below and behind the eye naked, ear-plumes yellow, bill muscicapine, tarsus longer than culmen, wing longer than tail, the latter nearly square. — One species known.

Range. Sumatra.

1. *Gymnocrotaphus tygus*.

*Brachypus tygus* Bp. Consp. I, p. 262 (1850).

*Pycnonotus tygus* Sharpe, Cat. B. VI, p. 156 (1881).

Hab. Sumatra.

The two typical specimens.

GENUS *Alcurus* Hodgson.

Type: *Alcurus striatus* (Blyth).

Upper surface and chest olive, with white or yellowish white shaft-streaks, head strongly crested, crest-feathers sword-shaped, tarsus equal to culmen in length, wing longer than tail, the latter but faintly rounded or nearly square. — Two species known.

Range. From the Eastern Himalayas through Burma and Tenasserim to Sumatra.

## Key to the species.

- a. Throat yellow . . . . . *striatus*.  
b. Throat white . . . . . *leucogrammicus*.

1. *Alcurus striatus*.

*Alcurus striatus* Blyth, J. A. S. Beng. XIV, p. 570 (1845); Sharpe, Cat. B. VI, p. 94 (1881); Oates, B. Br. Ind. I, p. 266 (1889).

Hab. From the Eastern Himalayas through Burma to Tenasserim.

Four specimens from Sikkim, Nepal and Thibet.

2. *Alcurus leucogrammicus*.

*Pycnonotus leucogrammicus* S. Müll. Nat. Tijdschr. Ned. Ind. 1835, p. 362; Sharpe, Cat. B. VI, p. 155 (1881).

Hab. Sumatra.

The three typical specimens from Sumatra.

GENUS *Pinarocichla* Sharpe.

Type: *Pinarocichla euptilosa* (Jard. & Selb.).

Above olive-brown, underneath ashy white, head slightly crested, the feathers on the centre of the crown being the longest, rump-feathers very long and dense, and with a broad black subterminal bar, tarsus equal to culmen in length, tail shorter than wing, not much rounded. — One species known.

Range. That of the species.

1. *Pinarocichla euptilosa*.

*Brachypus euptilosus* Jard. & Selb. Ill. Orn. IV (new ser.) pl. III.

*Pinarocichla euptilosa* Sharpe, Cat. B. VI, p. 62 (1881); Oates, B. Br. Ind. I, p. 279 (1889).

Hab. From Southern Tenasserim down through Malacca to Sumatra, Java, Banka and Borneo.

Four specimens from Sumatra, two from Banka, and two from Borneo.

GENUS *Poliolophus* Sharpe.

Type: *Poliolophus urostictus* Sharpe.

Resembling the preceding genus, but smaller, tail-feathers

more broadly tipped with white, a fleshy wattle round the eye. — Two species known.

Range. Philippine Islands.

1. *Poliolophus urostictus*.

*Brachypus urostictus* Salvad. Atti R. Acad. Tor. V, p. 509.

*Poliolophus urostictus* Sharpe, Trans. Linn. Soc. new series, Zool. I, p. 334 (1877); id. Cat. B. VI, p. 63 (1881).

Hab. Philippine Islands.

One specimen from Samar Islands and two from Mindanao.

2. *Poliolophus basilanicus* <sup>1)</sup>.

*Poliolophus basilanicus* Steere, List Birds and Mamm. Philipp. (see Ibis 1891, p. 303, note); id. Ibis 1891, p. 313.

Not represented.

GENUS *Mesolophus*, n. g.

Type: *Mesolophus flaviventris* (Tickell).

General color olive-yellow, head black, a long crest of sword-shaped (not lanceolate) feathers springing from the centre of the crown, while the rest of the crown-feathers are not lengthened, tarsus equal in length to the culmen, wing longer than tail. — Two species known.

Range. From the Central Provinces of British India northward to the Himalayas, eastward to Cochin China and southward to the Malay Peninsula; Borneo.

Key to the species.

- a. Chin and throat black like rest of the head . . . *flaviventris*.
- b. Chin and throat yellow, like rest of lower surface. . *montis*.

1. *Mesolophus flaviventris*.

*Vanga flaviventris* Tickell, J. A. S. Beng. II, p. 573 (1833).

*Otocompsa flaviventris* Sharpe, Cat. B. VI, p. 161 (1881); Oates B. Br. Ind. I, p. 278 (1889); Baker, J. Bomb. N. H. Soc. VII, pl. XV (1892).

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1) Having neither description nor specimens of this species at my disposal, I am unable to give a diagnosis of it by the way of a key.

Hab. From the Himalayas southward to the Central Provinces and to the Malay Peninsula and Cochin China.  
Five specimens from Nepal and Tenasserim.

## 2. *Mesolophus montis*.

*Rubigula montis* Sharpe, P. Z. S. 1879, p. 247; id. Ibis 1889, p. 276; Everett, List Birds Born. p. 115 (1889); Sharpe, Ibis 1890, p. 277; id. id. 1892, p. 433; Hose, Ibis 1893, p. 392; Sharpe, Ibis 1894, p. 543.

*Otocompsa montis* Sharpe, Cat. B. VI, p. 162 (1881).

Hab. Mountain-regions of Borneo.

Two specimens from Mount Dulit (N. W. Borneo).

## GENUS *Rubigula* Blyth.

Type: *Rubigula dispar* (Horsf.).

Upper surface yellowish olive, head black, no distinct crest, feathers on throat red, narrow and bristly, tarsus equal in length to the culmen, tail almost square. — Two species known.

Range. Southern India, Sumatra and Java.

### Key to the species.

- a.* Larger, chin conspicuously black, throat brilliant scarlet. *dispar*.
- b.* Smaller, black chin-spot scarcely visible, throat orange-red. *gularis*.

### 1. *Rubigula dispar*.

*Turdus dispar* Horsf. Trans. Linn. Soc. XIII, p. 150 (1820); Raffl. t. c. p. 310; Temm. Pl. Col. II, pl. 137 (1838).

*Rubigula dispar* Blyth, J. A. S. Beng. XIV, p. 576 (1845); Sharpe, Cat. B. VI, p. 167 (1881).

Hab. Sumatra and Java.

Three specimens from Sumatra and two from Java.

### 2. *Rubigula gularis*.

*Brachypus gularis* Gould, P. Z. S. 1835, p. 186; Bp. Consp. I, p. 264 (1850).

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*Rubigula gularis* Blyth, J. A. S. Beng. XIV, p. 576 (1845); Sharpe, Cat. B. VI, p. 167 (1881).

*Pycnonotus gularis* Oates, B. Br. Ind. I, p. 289 (1889).

Hab. Southern India.

Not represented.

### GENUS *Iridia* Blyth.

Type: *Iridia cyaniventris* Blyth.

Upper surface greenish yellow, head black or gray, no distinct crest, feathers on throat smooth, not different from rest of under surface in color or shape, tarsus equal to the culmen in length, tail shorter than wing, square. — Four species known.

Range. Indian Peninsula and Ceylon, Malay Peninsula, Sumatra, Java and Borneo.

#### Key to the species.

- a.* Under surface yellow . . . . . *melanictera*.
- b.* Under surface gray . . . . . *cyaniventris*.
- c.* Under surface scaly.
  - a'*. White tips to outermost tail-feathers shorter, not exceeding 1,5 cm. in length . . . . . *squamata*.
  - b'*. White tips on outermost tail-feathers longer, more than two cm. . . . . *Webberi*.

#### 1. *Iridia melanictera*.

*Muscicapa melanictera* Gm. S. N. I, p. 941 (1789).

*Rubigula melanictera* Wald. Ibis 1866, p. 321; Legge, Birds Ceylon, p. 477 (1880); Sharpe, Cat. B. VI, p. 168 (1881).

*Pycnonotus melanicterus* Oates, B. Br. Ind. I, p. 288 (1889).

Hab. Ceylon.

Six specimens.

#### 2. *Iridia cyaniventris*.

*Pycnonotus cyaniventris* Blyth, J. A. S. Beng. XI, p. 792 (1841); Oates, B. Br. Ind. I, p. 290 (1889).

*Iridia cyaniventris* Blyth, J. A. S. Beng. XIV, p. 578 (1845); Horsf. & Moore, Cat. I, p. 247 (1854).

*Rubigula cyaniventris* Sharpe, Cat. B. VI, p. 169 (1881); Oates, B. Br. Ind. I, p. 200 (1889).

*Ixidia paroticalis* <sup>1)</sup> Sharpe, Ibis 1878, p. 418; id. id. 1879, p. 256.

*Rubigula paroticalis* Sharpe, Cat. B. VI, p. 170 (1881); Hose, Ibis 1893, p. 391; Sharpe, Ibis 1893, pp. 547, 551; id. id. 1894, p. 543.

Hab. Malay Peninsula, Sumatra and Borneo.

One specimen from Wellesley, four from Sumatra, and two from Borneo.

### 3. *Ixidia squamata*.

*Turdus squamatus* Temm. Pl. Col. II, pl. 453, fig. 2 (1838).

*Pycnonotus squamatus* Gray, Gen. B. I, p. 237 (1844—1849).

*Ixidia squamata* Nichols. Ibis 1881, p. 147.

*Rubigula squamata* Sharpe, Cat. B. VI, p. 170 (1881).

Hab. Java.

The two typical specimens.

### 4. *Ixidia Webberi*.

*Ixidia squamata* (nec Temm.) Salvad. Ucc. Born. p. 200 (1874); Sharpe, Ibis 1878, p. 419.

*Ixidia Webberi* Hume, Str. Feath. 1879, pp. 40 and 63; Reichenow & Schadow, J. f. O. 1879, p. 432.

*Rubigula Webberi* Sharpe, Cat. B. VI, p. 171 (1881).

Hab. Malay Peninsula, Sumatra and Borneo.

Two specimens from Sumatra and one from Batu Song (Borneo).

## GENUS *Brachypodius* Blyth.

Type: *Brachypodius melanocephalus* (Gm.).

General color olive-yellow or gray, head not crested, rump-feathers lengthened, somewhat stiff, subterminally barred with black, like in *Pinarovichla*, tail strongly rounded, subterminally barred with black, wing longer than tail (in *B. phaeocephalus* only faintly so), tarsus equal to culmen in length. — Five species known.

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<sup>1)</sup> See my remarks upon this species in my list of the Birds of the Dutch Borneo-Expedition, which shall be published in the next volume of this periodical.

Range. Southern part of the Indian Peninsula, Burma, Malay Peninsula, Andamans, Sumatra, Borneo, and the Philippine Archipelago.

### Key to the species.

*a.* Head black.

*a'*. General color yellowish olive. . . . . *melanocephalus*.

*b'*. Olive-yellow, mantle and under surface gray . *cinereiventris*.

*c'*. Entire upper and under surface gray . . . . *chalcocephalus*.

*b.* Head not entirely black.

*a'*. Hind head olive-green, like rest of head,

throat black . . . . . *fusciflavescens*.

*b'*. Hind head gray, throat gray . . . . . *phaeocephalus*.

### 1. *Brachypodius melanocephalus*.

*Lanius melanocephalus* Gm. Syst. Nat. I, p. 309 (1789).

*Brachypodius melanocephalus* Blyth, J. A. S. Beng. XIV, p. 576 (1845); Salvad. Ucc. Born. p. 201 (1874).

*Micropus melanocephalus* Sharpe, Cat. B. VI, p. 65 (1881); Büttik. N. L. M. 1887, p. 62; Oates, B. Br. Ind. I, p. 294 (1889).

Hab. From British Burma down to the Malay Peninsula; Nias, Sumatra, Banka, Java, Borneo, and Palawan (Philippine Islands).

Two specimens from British Burma, one said to be obtained in Cochin China (Deyrolle 1867), one from Malacca, four from Sumatra, four from Banka, two from Java, one from Bawean (Java Sea), three from Borneo, one from Labuan and two from Palawan.

### 2. *Brachypodius cinereiventris*.

*Brachypodius cinereiventris* Blyth, J. A. S. Beng. XIV, p. 576 (1845).

*Micropus cinereiventris* Sharpe, Cat. B. VI, p. 67 (1881); Oates, Birds Br. Ind. I, p. 295 (1889).

Hab. From Tipperah through British Burma to Rangoon and down to Malacca.

Not represented.

### 3. *Brachypodius chalcocephalus*.

*Iros chalcocephalus* Temm. Pl. Col. II, pl. 453, fig. 1 (1838).

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*Micropus chalcocephalus* Sharpe, Cat. B. VI, p. 68 (1881).

Hab. Java and Bawean.

The two typical specimens from Java and Bawean.

#### 4. *Brachypodius fusciflavescens*.

*Brachypodius fusciflavescens* Hume, Str. Feath. 1873, p. 297.

*Micropus fusciflavescens* Sharpe, Cat. B. VI, p. 66 (1881); Oates, B. Br. Ind. I, p. 295 (1889).

Hab. Andamans.

Not represented.

#### 5. *Brachypodius poiocephalus*.

*Brachypus poiocephalus* Jerd. Madr. Journ. X, p. 246 (1839).

*Brachypodius poiocephalus* Blyth, J. A. S. Beng. XIV, p. 576 (1845).

*Micropus phaeocephalus* Sharpe, Cat. B. VI, p. 68 (1881); Oates, B. Br. Ind. I, p. 296 (1889).

Hab. Malabar.

One specimen.

### GENUS *Microtarsus* Eyton.

Type: *Microtarsus melanoleucus* Eyton.

General color black, head not crested, rump-feathers stiff and very long, reaching nearly the tips of upper tail-coverts, tail much rounded, uniform black, tarsus shorter than culmen, wing longer than tail. — One species known.

Range. That of the species.

#### 1. *Microtarsus melanoleucus*.

*Microtarsus melanoleucus* Eyton, P. Z. S. 1839, p. 102; Salvad. Ucc. Born. p. 202 (1874).

*Micropus melanoleucus* Sharpe, Cat. B. VI, p. 69 (1881).

Hab. Malacca, Sumatra and Borneo.

One specimen from Malacca, four from Sumatra, and two from Borneo.

Leyden Museum, April 1896.

## NOTE XXXIII.

## ZOOLOGICAL RESEARCHES IN LIBERIA.

## A LIST OF THE BRENTHIDAE,

collected by J. BÜTTIKOFER, C. F. SALA and  
F. X. STAMPFLI

BY

**Dr. ANGELO SENNA,**

Assistant in the R. Museum at Florence.

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The small collection of Brenthidæ obtained in Liberia by the well-known and successful travellers Büttikofer, Sala and Stampfli, and submitted to me by Mr. C. Ritsema, amounts to 27 specimens, all belonging to described species. Nevertheless I thought it useful to publish the following list as it throws some further light upon the distribution of the African Brenthidæ.

1. *Zemioses porcatus* Pascoe, Journ. of Entom. I, p. 394, 1862.

Six specimens collected by Büttikofer.

The locality of the type of this species is Port Natal, but recently Mr. L. Conradt obtained it in Togoland.

2. *Symmorphocerus semipunctatus* Pascoe, Ann. and Mag. of Nat. Hist. ser. 4, X, p. 321, pl. XV, figs. 7 and 7a, ♂, 1872 (sub *Cordus*).

One female collected by Büttikofer.

This species, originally described from Port Natal, is

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now for the first time recorded from West Africa. It is closely allied to *S. Alluaudi* Senna<sup>1)</sup> from Yoruba (Oyo), but distinguished by the apophyses of the metarostrum which have the sides oblique, not parallel. *Symmorphocerus frontalis* Oliv.<sup>2)</sup> from Guinea and Natal, which has the sides of the apophyses likewise oblique, differs by its larger size, by the different colour, and by the less punctured elytral striae.

3. *Spatherhinus gabonicus* Thomson, Arch. entom. II, p. 116, 1858 (sub *Arrhenodes*).

One male and one female from the Junk River, collected by Mr. Stampfli.

A common species, recorded from Assinie, Gaboon and Congo.

4. *S. longiceps* Kolbe, Entom. Nachrichte, XIV, p. 308, 1888.

One male collected by Büttikofer and Sala.

The habitat of this remarkable species is the same as that of the preceding one. Mr. Power had named this species *S. liberiae* Pow. in litt.

5.? *S. picturatus* Kolbe, Entom. Nachrichte, XIV, p. 306, 1888.

One female, in bad condition, from the Junk River, collected by Mr. Stampfli.

This species has been described from a single male from Cuango; Mr. Alluaud captured it in Assinie.

6. *Eupsalis gentilis* Thomson, Arch. entom. II, p. 117, 1858 (sub *Arrhenodes*).

Two males collected by Büttikofer and Sala.

A common West African species.

7. *Ceocephalus picipes* Olivier, Entom. V, n°. 84, p. 442, pl. 2, fig. 18, ♀, 1807—8.

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1) Ann. Soc. Entom. France, LXIII, p. 409, fig. 1, 1894.

2) Entomologie, V, n°. 84, p. 434, pl. 2, fig. 14, 1807—8.

Several specimens from the Junk River and Cape Mount, collected by Büttikofer, Sala and Stampfli.

The commonest species of Ethiopical Brenthidæ.

8. *Storeosomus Rissi* Labram & Imhoff, Gen. Curc. I, n°. 12, 1842.

One female from the Junk River, obtained by Mr. Stampfli.

Florence, March 11th 1896.

## NOTE XXXIV.

ON TRICHOMANIS HOEVENII HUBR. <sup>1)</sup>

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A letter was read, addressed to the Secretary by Dr. A. A. W. Hubrecht, F. M. Z. S., calling attention to the account of a supposed new Mammal from Sumatra by him, published in the »Notes from the Leyden Museum" (vol. XIII, p. 241), under the belief that it would turn out to be an unknown species of Edentate, and which he had proposed to call *Trichomanis hoevenii*. Further inquiries and information received from Mr. Pruys van der Hoeven (after whom the supposed new animal had been named) had convinced Dr. Hubrecht that it was an *Arctonyx* (*A. collaris*), and that no further hopes could be entertained of the existence of an unknown Edentate in the forests of Sumatra.

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1) Reprinted from »Proc. Zool. Soc. London, 1895, p. 522 (Meeting of June 18, 1895)."



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1) This name must be written "*Velthuyzenii*" instead of "*Velthuizenii*".

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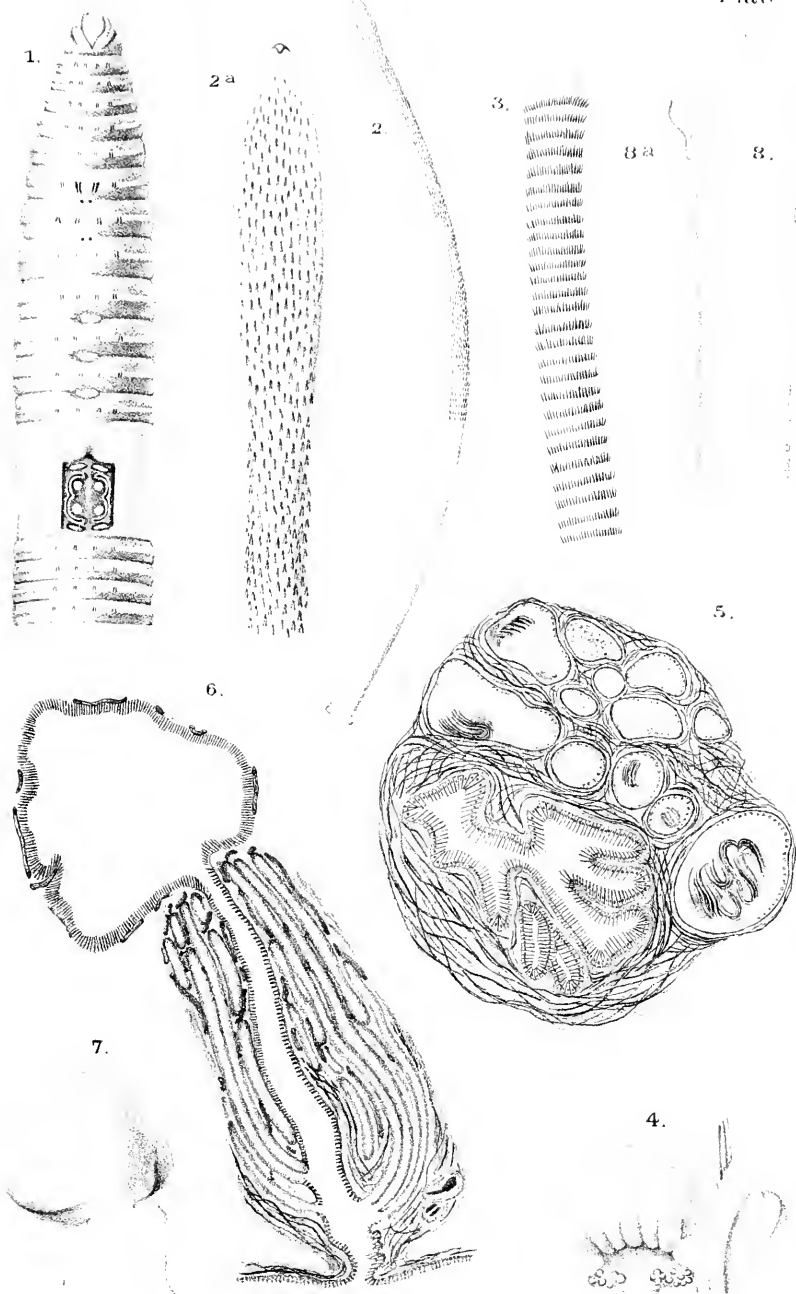
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Dr. R. Horst ad nat. del.

A. J. J. Wendel lith.

P. W. M. Trap impr.

1—5. *Benhamia liberiensis* Horst. 6. *Benhamia Beddardi* Horst.

7—8. *Benhamia Stampflii* Horst.



1b.



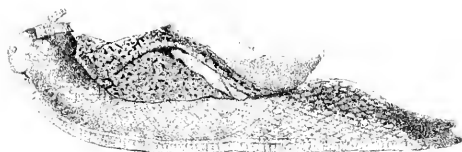
1a.



1c.



2b.



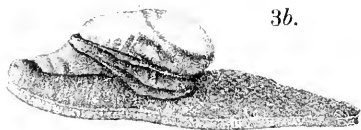
2a.



2c.



3b.



3a.



3c.



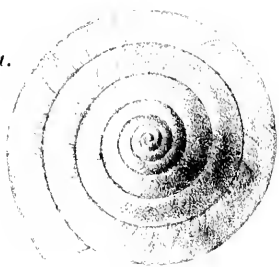
P. W. M. Trap impr.

1. *Parmarion Goedhuisi* Schepm.    2. *Microparmarion litteratus* Schepm.  
3. *Helicarion semicalcareus* Schepm.





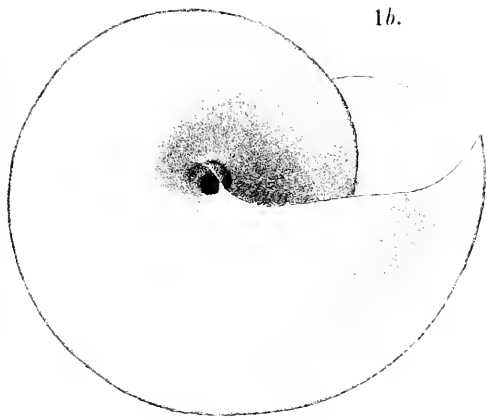
2a.



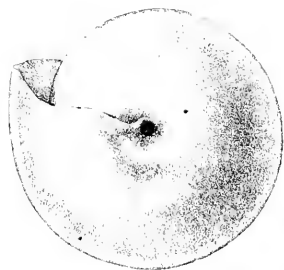
1a.



1b.



2b.



2c.



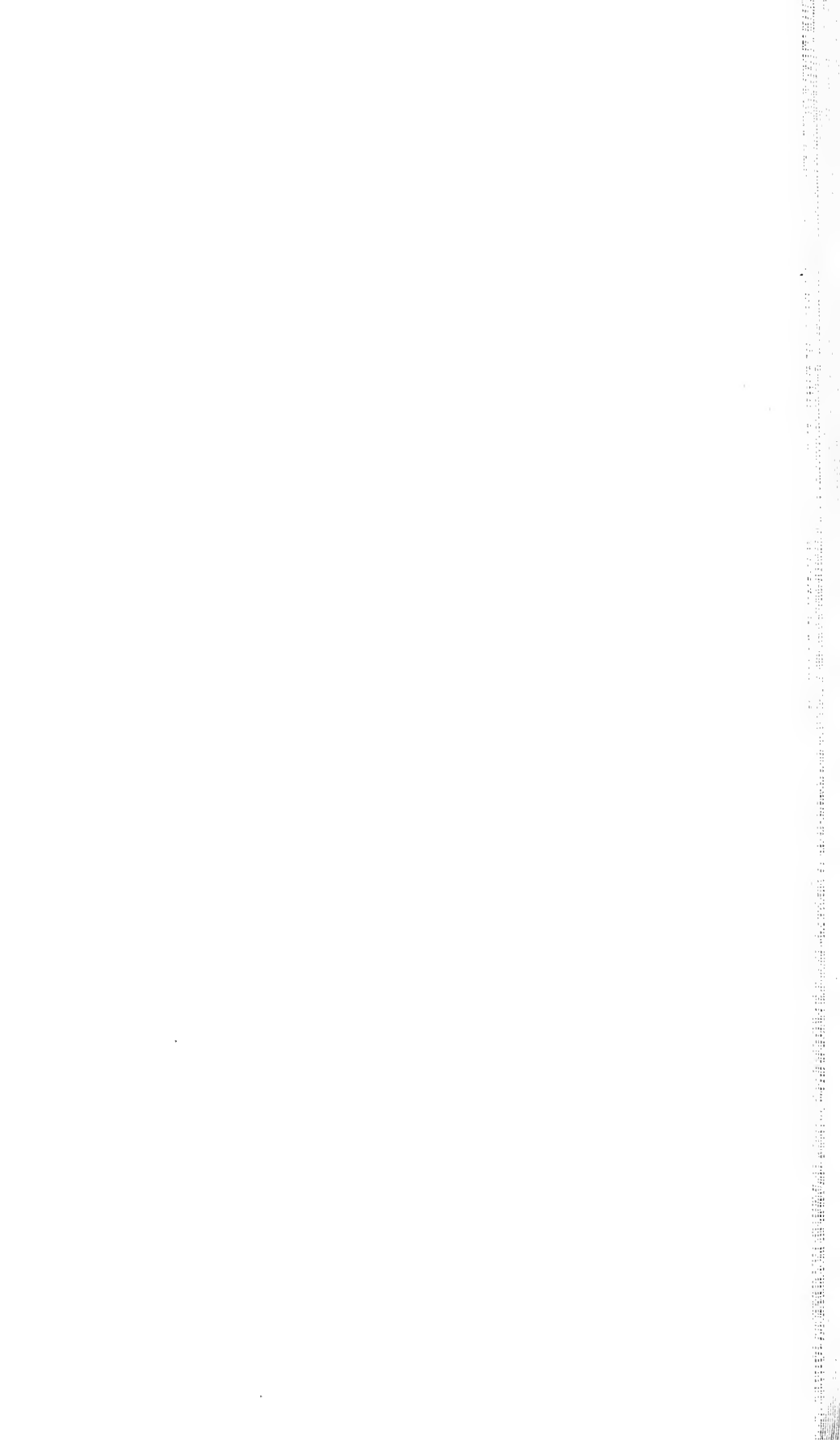
1c.



R. Raar ad nat. del. et lith.

1. *Hemiplecta Buttikoferi* Schepm.

2. *Dyakia densestriata* Schepm.





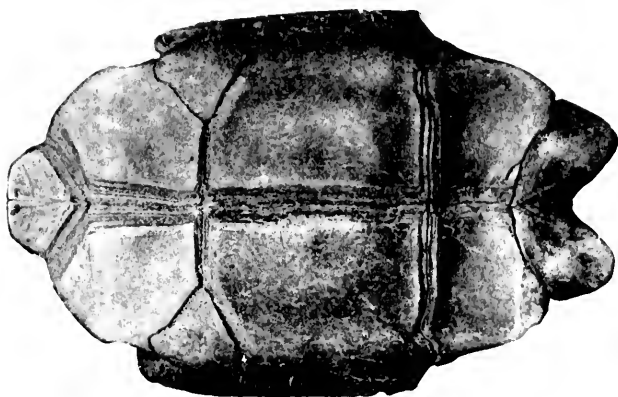
1. *Unio Velthuizeni* Schepm.
2. *Unio infrarostratus* Schepm.



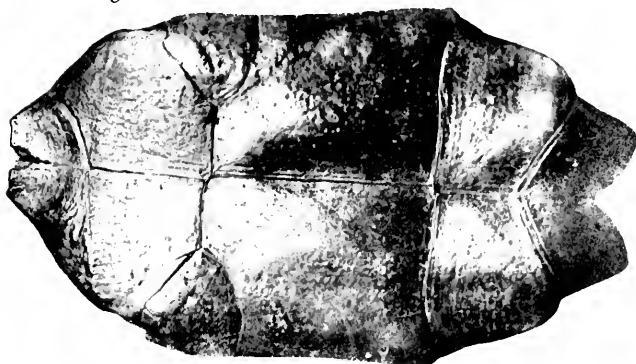
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2

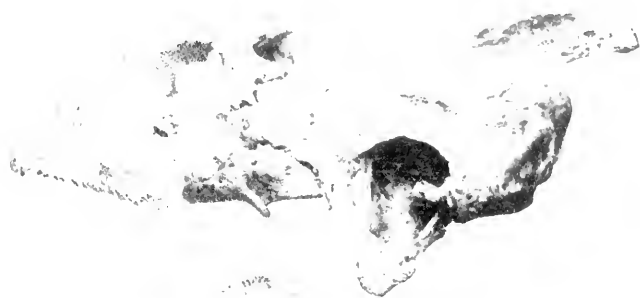


3

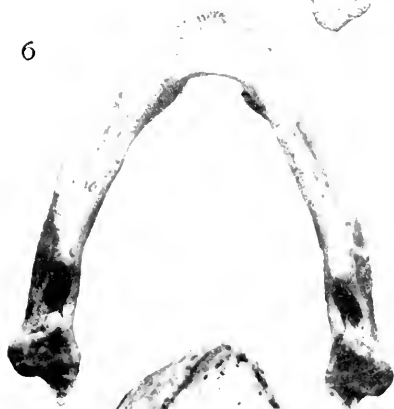




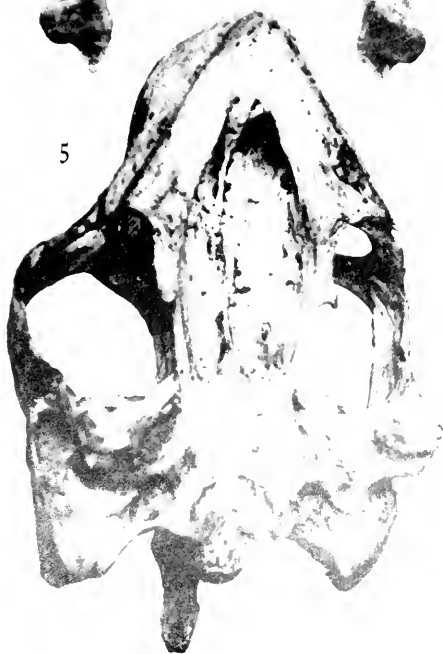
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6



5



J. C. WÄKERLIN, phot.

Lichtdruk van H. KLEINMANN & Co., Haarlem.

*Testudo emys* Schleg. & Müll.





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7209

# NOTES

FROM THE

# LEYDEN MUSEUM

EDITED

BY

**Dr. F. A. JENTINK,**

Director of the Museum.

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